

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



---

---

Reserve  
aTX364  
.R67  
1995

---

---

# ***ERS Staff Paper***

---

---

Economic  
Research  
Service

Food and  
Consumer  
Economics  
Division

Number 9515

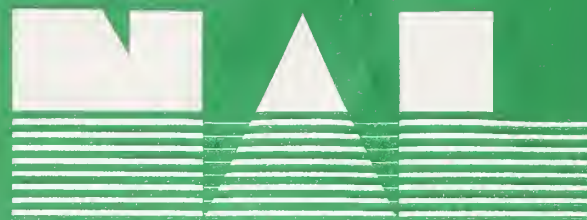
## **The ES/WIC Nutrition Education Initiative: Progress in the First Year**

Donald Rose

Jon Weimer

This report was reproduced for limited  
distribution to the research community  
outside the U.S. Department of Agriculture  
and does not reflect an official position  
of the Department.

United States  
Department of  
Agriculture



**National Agricultural Library**

JAN 29 2004

## Preface

The Economic Research Service (ERS) was asked to assist the Cooperative State Research, Education, and Extension Service (CSREES, an agency that now includes the former Extension Service) in the evaluation of the projects that received competitive funds under the ES/WIC Nutrition Education Initiative. This report is part of a larger evaluation effort by ERS which includes advice and technical assistance to the projects and Federal-level staff.

Based on the first-year reports submitted by the State agencies, this report is preliminary and should be considered a working paper. The report summarizes the types of activities carried out during the first year as well as the progress made toward meeting the Initiative's objectives. It was initially drafted to provide information to CSREES for congressional briefings related to the Initiative. However, analysts and nutrition educators who have an interest in the nutritional well-being of the WIC population may find this report of use not only for the background information on the Initiative, but also as a reference guide to further exploration of the specific educational interventions created under it.

**The ES/WIC Nutrition Education Initiative: Progress in the First Year.** By Donald Rose and Jon Weimer. Food and Consumer Economics Division, Economic Research Service, U.S. Department of Agriculture. Staff Paper No. AGES-9515.

### **Abstract**

This report summarizes the progress of 18 nutrition education projects in their first year of operation. The projects were awarded funds under USDA's ES/WIC Nutrition Education Initiative and were administered at the local level within the Cooperative Extension System. The main goal of this Initiative was to change the behavior and promote the nutritional well-being of the neediest WIC participants. A wide variety of innovative educational techniques were created or adapted to address the nutritional needs of these hard-to-reach populations. The report reviews progress of the projects in meeting specific process and outcome objectives of the Initiative.

### **Acknowledgments**

The authors thank Wells Willis of the Cooperative State Research, Education, and Extension Service (CSREES), who has coordinated the entire Initiative at the Federal level. The authors also acknowledge the contributions of Sylvia Minor and George Mayeski of CSREES and Brenda Lisi, Rhonda Kane, and Jill Randell of Food Consumer Service to this project. We especially thank the ES/WIC project directors including Joanne P. Ikeda, Jennifer Anderson, Patricia Kendall, Linda D. Cook, JoAnn McCloud-Harrison, Rebecca S. Pobocik, Elizabeth Schafer, Betty Cameron, Jean Ann Anliker, Barbara Mutch, Margaret McConnell, Charlotte McKay, Sharon O'Gorman, Jamie Benedict, Joyce M. Woodson, Muriel S. Brink, Soneeta Grogan-Enanoria, Ngairé M. Van Eck, Glenna Williams, Linda M. Sebelia, Katherine L. Sharman, Brenda J. Thames, Katheleen Ladewig, Elizabeth Powers-Hammond, and Sue Butkus, without whose efforts this Initiative would not be possible.

**This report was reproduced for limited distribution to the research community outside the U.S. Department of Agriculture and does not reflect an official position of the Department.**





## Contents

Summary .....	iv
Introduction .....	1
Project Implementation .....	2
Targeting .....	3
Educational Interventions .....	4
Interagency Cooperation .....	5
Expenditures .....	7
Project Results .....	7
Dietary Outcomes .....	8
Knowledge .....	8
Behavior .....	9
Breastfeeding Outcomes .....	10
Knowledge .....	10
Behavior .....	11
Meal Planning and Food Preparation Outcomes .....	11
Knowledge .....	11
Behavior .....	12
Other Outcomes .....	12
Summary of Project Results .....	13
Conclusions .....	14
References .....	15
Table 1 – Summary of competitively-awarded projects .....	17
Table 2 – Educational materials and curricula produced .....	19
Table 3 – Cooperation, participation, and expenditures .....	21
Table 4 – Selected dietary knowledge outcomes .....	23
Table 5 – Selected dietary behavior outcomes .....	24
Table 6 – Breastfeeding outcomes .....	26
Table 7 – Selected meal planning and food preparation outcomes .....	27
Appendix: Executive Summaries from the First Year Final Reports .....	28



## Summary

The ES/WIC Nutrition Education Initiative was designed as a way to combine the strengths of two successful low-income nutrition programs – Cooperative Extension's food and nutrition education program and the Special Supplemental Food Program for Women, Infants, and Children (WIC). The main goal of this Initiative is to change the behavior and promote the nutritional well-being of the neediest WIC participants.

Under this 3-year Initiative, 18 Cooperative Extension System (CES) projects were competitively awarded special funds in FY 1993 for the development of community nutrition education programs. In addition, all 50 States and 6 territories were awarded formula funds for smaller projects with similar goals. This report reviews the progress of the competitively awarded projects in their first year of operation and is based on reports submitted by each of the projects.

By emphasizing local flexibility, this Initiative has allowed projects to design nutrition educational programs tailored to the specific needs of high-risk groups in each of the participating States. A number of projects have focused their efforts on the rural poor, since they often have less access to information and services. Other projects have focused on pregnant teens, who for nutritional reasons are a particularly high-risk group. Still others have focused on specific ethnic groups, since dietary habits vary widely by subculture and nutrition education messages must be tailored accordingly.

The first year of this Initiative has seen the successful creation of a number of educational curricula and materials, including video storytelling, intergenerational teaching, the use of interactive compact disk technology, and hospital and home breastfeeding support visits. Prenatal nutrition materials were produced or adapted for high-risk WIC participants in 6 of the special projects. Four projects produced new training or education materials to promote breastfeeding and six projects created or adapted materials on child feeding. Cooperative Extension teaching topics, such as meal planning, food shopping, and food safety, were the subject of materials created at five projects.

A primary objective of this Initiative has been to promote interagency cooperation between WIC and Extension projects, since cooperation between the two agencies at the local level is vital to strengthening referral networks and improving program efficiency. This objective has been advanced substantially in the first year. All 18 projects developed project advisory committees consisting of both WIC and Extension representatives. All but two of the projects conducted joint WIC and Extension staff development and training sessions and all but one of the projects had referral systems in place jointly with State or local WIC agencies.

Goals for client participation in the first year of the ES/WIC Initiative were exceeded. Over 5,600 participants were served by the 15 projects that had begun seeing clients. This represents 117 percent of the initial goal for the first year. Two other projects had planned to enroll participants, but were still in development as the year ended. Another project had planned to use the whole year for development of curriculum and materials.

For the first year of the ES/WIC Initiative, \$1.43 million dollars were awarded to the 18 competitive projects. Project awards ranged from \$37,000 to \$100,000, averaged about \$80,000, and required a 50-percent match from other sources. About 73 percent of the Federal funds (\$1.05 million) awarded for these projects had been spent by the end of the first year. Funds were carried over into the second year of operation for all but three of the projects.

Although the first year of this 3-year Initiative was originally intended to be a developmental phase, many of the State projects not only began implementation but collected outcome data. Of the 18 competitive projects, outcome data were collected in 13.

While there are some hopeful signs, it is too early in the development of projects under this Initiative to make definitive statements about project results. Many of the projects found positive changes in either dietary intake, infant feeding, or food preparation behaviors. However, the meaning of these results is unclear, since few projects performed statistical analyses to determine whether knowledge or behavior changes were a result of the intervention or simply due to chance. Even less frequently did projects appropriately compare changes with those of a control or comparison group. In addition, reporting of results in dissimilar ways has made it difficult to summarize outcomes for the entire Initiative. Although nine projects collected dietary data using essentially the same evaluation instrument, five different methods for reporting these results were used.

The lack of definitive results is also a result of institutional factors. From the beginning, this Initiative was designed to develop innovative nutrition education techniques and to promote new service delivery methods rather than to perform evaluation research. Although a rigorous impact evaluation of the Initiative by an outside group was originally envisioned, funds were not made available for this activity. Some of the projects have developed rigorous evaluation protocols, although the full 3 years may be needed before the results are available on these projects.

Opportunities exist to improve the evaluation of competitive projects under this Initiative. Conducting statistical analyses of results at the local level, as well as the use of control or comparison groups, could strengthen the inferences of project outcomes. Reporting of results in a standard way would also facilitate generalization across projects.



# **THE ES/WIC NUTRITION EDUCATION INITIATIVE: PROGRESS IN THE FIRST YEAR**

**Donald Rose  
Jon Weimer**

## **Introduction**

Recognizing the importance of local level service coordination in the achievement of nutrition objectives, the U.S. Department of Agriculture in fiscal year 1993 funded community-based education projects designed to promote the nutritional health of the neediest WIC Program participants. Under the auspices of the ES/WIC Nutrition Education Initiative, 17 States were competitively awarded funds to be used for the development, delivery, and evaluation of innovative nutrition education projects. A total of 18 projects<sup>1</sup> are operated at the State level through the Cooperative Extension System (CES), with funds administered at the Federal level by the Cooperative State Research, Education and Extension Service (CSREES).<sup>2</sup>

The Initiative was conceived as a way to combine the strengths of two low-income nutrition programs, in particular, WIC's resource of health professionals, access to a large at-risk low-income population, and successful combination of food assistance and nutrition education with the Cooperative Extension System's model of intensive one-on-one education by paraprofessionals. In addition to the competitively awarded projects, the Initiative provides funds, allocated on a formula basis, to all 50 States and 6 territories to operate small projects with similar goals.

There is tremendous diversity in the target audiences, objectives, and educational strategies employed by the 18 competitively funded projects. This diversity is a natural outgrowth of a CSREES commitment to tailoring community nutrition programs to the needs of local situations. Underlying this commitment is a belief that local-level development can lead to successful innovations. Ultimately, such innovations expand the

---

<sup>1</sup> The North Carolina CES operates two projects – a breastfeeding promotion project and a pregnant adolescent project. The projects were initially funded as one, but have been split for administrative purposes. North Carolina has not received extra funds to operate the two projects, nor has the total amount exceeded the maximum award level to other States.

<sup>2</sup> The Initiative was originally administered by the Extension Service (ES), which has been reorganized into CSREES; thus, the Initiative was originally designated as the ES/WIC Initiative and retains that designation. A multi-agency team, known as the ES/WIC Implementation Team, provides advice and support to the Initiative and is composed of members from CSREES, the Food and Consumer Service (FCS, formally the Food and Nutrition Service) and the Economic Research Service (ERS).

pool of nutrition education interventions that can be tapped by health professionals to improve the Nation's dietary habits.

From the beginning, this Initiative was designed to promote innovative service delivery methods rather than evaluation research. Although a rigorous impact evaluation of the Initiative by an outside group was initially envisioned, funds were not made available for this activity; nor was it considered a priority. The local flexibility inherent in this Initiative and the diversity of projects fostered by that flexibility are not conducive to a rigorous evaluation, which typically requires the consistent and controlled study of a limited number of program options. This, of course, makes it difficult to draw conclusions about nutrition education. However, evaluation can be an important part of a service program; each of the competitively awarded projects does have its own evaluation component.

This report summarizes progress made under this Initiative among the competitively awarded projects in their first full year of funding. It is based on a review of the first-year final reports, which included information about local evaluations and were submitted by each of the projects. The report is divided into two main sections which review project implementation and results.

Three main objectives of the ES/WIC Nutrition Education Initiative were set out in the initial Request for Applications:

- Extension programs will increase interagency cooperation related to nutrition education in order to reach an increased number of the neediest WIC population;
- Participating individuals will acquire the *knowledge and skills* that contribute to nutritionally sound diets and a healthy lifestyle; and
- Participating individuals will acquire *behaviors* that contribute to nutritionally sound diets and a healthy lifestyle.

The first objective is a process objective and is discussed in the project implementation section along with other programmatic issues such as targeting and the nature of the educational interventions. The larger focus of this report is on outcomes; progress toward fulfilling the second and third objectives is treated in the project results section. Executive summaries for all 18 projects are reprinted from the first-year reports in Appendix A.

### **Project Implementation**

The first year of this 3-year Initiative was originally planned to be a developmental phase in order to initiate collaboration between local CES and WIC agencies, to conduct focus groups on nutrition education needs, to develop and field test nutrition education materials and curricula, and to begin pilot implementation. Many of the States progressed beyond the developmental phase and have begun implementation of their programs and collection of outcome data.



Table 1 summarizes the special projects under this Initiative and includes information about their target groups, educational interventions, and stage of development. Three projects devoted the first year to developing materials or curriculum. Eight projects are in the enrollment phase; that is, they have enrolled less than half of their original goal or have not collected outcome data on substantial numbers of individuals. Seven projects are in the outcome phase, having already collected evaluation data on at least one quarter of their intended service level. Categorization of State projects along this development continuum is merely for orientation purposes and should not be used as a comparative measure of start-up efficiency between the States. Such comparisons are not possible since program objectives, target populations, and local conditions, including initial support from WIC and other State agencies, vary tremendously by State.

## Targeting

A key element of this Initiative is targeting the neediest of WIC participants. The neediest population is defined as those who, as a result of factors such as geographic isolation, age, education, circumstances of poverty, cultural background, or language, lack the skills, knowledge and abilities to achieve a nutritious diet and a healthy lifestyle for themselves and their families. The projects selected under this Initiative target a wide variety of age, geographic, and ethnic groups.

For nutritional reasons, pregnant teenagers are a particularly high-risk group. Five of the 18 projects, including Georgia, Guam, Minnesota, North Carolina, and Oklahoma have targeted this group (table 1). Rural citizens often have less access to nutrition information and services; many of the projects, including Iowa, South Carolina, and New York have targeted these populations.

Nutrition education programs, of necessity, should be tailored to specific ethnic groups, since dietary habits vary widely by subculture. Many of the projects in this Initiative have reached out to people from specific ethnic backgrounds who have fallen through the safety net. Projects in Georgia, South Carolina, and Texas have reached African-American WIC participants, while those in Oklahoma and Minnesota have targeted American Indians. Florida has focused its efforts on Haitian-Americans.

Hispanic-Americans are quite diverse, and successful educational programs should reflect this fact. While Maryland has targeted immigrant populations from Central and South America, Texas and Nevada have focused on Mexican-Americans, since they make up a fast-growing part of their WIC populations. Colorado's program has emphasized yet another type of Hispanic sub-population, that of migrant farmworkers. The diversity within Asian and Pacific Islander populations has also been addressed by this Initiative; California has focused efforts on Vietnamese-Americans, Rhode Island on Cambodian-Americans, and Guam on Pacific Islanders.

## Educational Interventions

An important aspect of designing a successful educational intervention is performing a needs assessment. A number of the projects used focus groups for this purpose. Georgia and Rhode Island used this technique to identify program delivery strategies that would have a strong likelihood of success. In addition to this purpose, Colorado used focus groups to assess the needs of professionals, paraprofessionals, and volunteers. Florida used focus groups to learn more about Haitian cultural practices related to diet. Maryland studied the knowledge and behavior of its Hispanic population regarding infant feeding practices through an extensive survey and used focus groups to test culturally-appropriate educational materials. New York involved participants in programmatic decisions through the use of a diagnostic report that elicited their needs and interests. The efforts of the Guam project have led to the first characterization of the teen diet of Pacific Islanders on that island, which will be important for future educational programming.

One of the early steps that new projects must take is to develop the capacity in their staffs to effectively communicate with their target audiences. This is no small task, especially given the diversity of audiences. Nevada required a national search to find a Spanish-speaking nutritionist. Florida relied on an anthropology doctoral candidate with experience in Haiti and a Haitian-born nutritional sciences student to help orient its project to Haitian culture. Other projects hired paraprofessionals from the community and did extensive training in nutrition. Bilingual/bicultural Vietnamese paraprofessionals were hired by California. Rhode Island hired Cambodian peer counselors, while Maryland, Nevada, and Texas hired Spanish-speaking paraprofessionals. Iowa, Michigan, and North Carolina hired women to be peer counselors who were from the local communities and who had successfully breastfed.

These projects have also created or adapted a diverse set of nutrition education techniques, including video storytelling, intergenerational teaching, the use of interactive compact disk technology, and hospital and home breastfeeding support visits (table 1). For example, the Colorado project has trained volunteer grandmothers to promote nutrition, since these family members have particular influence in matters of maternal and child health among Mexican-Americans. Colorado also has engaged in extensive training efforts of paraprofessionals and professionals in the geographic areas of intervention. The Iowa, North Carolina, and Michigan projects have trained paraprofessionals to be breastfeeding peer counselors. Often wearing pagers, these women respond to immediate problems and even make hospital visits in order to promote breastfeeding from the beginning of life. In South Carolina, extension nutrition educators work in mobile health care teams, making visits to distant rural towns. The New York and Washington projects have promoted parenting skills among their participants, since this is a vital skill needed to improve nutritional outcomes.

The first year has seen the successful creation of a number of educational curricula and materials. California adapted an Expanded Food and Nutrition Educational Program (EFNEP) curriculum to a Vietnamese-American audience. Rhode Island produced a video, which used a soap opera format, to promote breastfeeding among Cambodian-Americans. Various other projects, including Colorado, Florida, Guam, and Minnesota produced videos in their first year. Maryland developed a full set of materials for its infant feeding peer



education program, including a calendar to remind parents of appropriate timing for the introduction of new foods. An interactive compact disk module was developed for low-literacy participants in Texas. This state-of-the-art technology allows participants to tailor an educational program to their individual needs. A complete list of educational curricula and materials produced or adapted in this first year is listed in table 2.

An important aspect of a new educational program is developing the means to get feedback from clients. Minnesota and Washington used focus groups as a process evaluation tool to evaluate the effectiveness of curricula or materials. Nevada used an open-ended questionnaire for this same purpose as well as to obtain suggestions for improvement in its program. Georgia used entry and exit group interviews to determine participants' expectations, reactions, and recommendations for its program. New York has used an open ended questionnaire to gauge whether participants increased their parenting knowledge and made adjustments in their interactions with toddlers. New York has also developed a means to evaluate improvements in parents' food behaviors toward their children; an innovative toddler food record assesses the diet quality of foods that are *offered* to toddlers.

Impact evaluation is also a key aspect of nutrition education programs and many of the States have developed or revised tools to assess this (table 2). For example, California developed pictorial instruments for its Vietnamese-American population, and Guam revised EFNEP evaluation instruments for its Pacific Islander population. An evaluation tool for breastfeeding knowledge was developed by the Michigan project. Oklahoma and North Carolina developed instruments to measure knowledge and beliefs of pregnant teens. Texas developed computer-scannable pre/post knowledge tests. A number of the States also did further testing on their evaluation instruments. Iowa assessed the content validity of its knowledge instrument, while Georgia performed reliability analysis on both its knowledge and attitude instruments. South Carolina also tested its instruments for validity and reliability.

### **Interagency Cooperation**

One of the main objectives of this Initiative is to increase interagency cooperation related to nutrition education, since cooperation between WIC and CES at the local level is vital to reaching the neediest WIC participants. Cooperation between providers at the local level can increase the efficiency of programs not only through the strengthening of referral networks, but also through the provision of more coordinated services.

Four indicators were used to document progress of the projects in promoting cooperation and are displayed in table 3. The first indicator is the number of staff development and training sessions held jointly or coordinated with State/local WIC agencies. An average of about seven such sessions per project were conducted under this Initiative. For the 16 projects that reported holding joint training sessions, the number of sessions ranged from 2 for Maryland to 17 for Texas.

The second indicator of cooperation is the number of WIC clinic sites whose participants were referred to the Extension agency. All but one of the projects had referral systems in place. About three WIC clinics per project were set up to make referrals to Extension agencies, with a range of 1 for Georgia to 10 for Colorado.

A key indicator for process evaluation—one which shows cooperation between CES and WIC through development of screening and referral procedures—is how many WIC participants were served by CES as result of this Initiative. The total number of participants served in the ES/WIC Initiative totaled 5,610. Three of the projects were still in development at the end of the first year and had not begun to enroll participants. For the other 15 projects, the number of participants served averaged 374 and ranged from 43 for Georgia to 1,932 for Texas.<sup>3</sup> This compares favorably with the projects' first year goals for enrollment. For the overall Initiative, projects served 117 percent of the original goal of 4,707.<sup>4</sup> Projects varied in their enrollment success rates. Ten of the 18 projects served more than 50 percent of their target and 7 of these projects served more than 90 percent of their original goal. Only 6 of the projects served less than 50 percent of their initial goal. Two of the projects did not have a specific recruitment goal for the first year.

Not all of the participants finished the planned educational interventions by the end of the first year. Table 3 also presents information on the number of participants who finished the educational interventions and for which outcome data exist. This ranges from 5 for Iowa to 470 for Minnesota.

The fourth indicator regarding project cooperation was an optional one. Projects were asked to report whether they had developed a State or local advisory group to assist in implementation decisions and which included both WIC staff and Extension representatives. All of the projects were successful in making use of such a group or committee.

Cooperation among local providers is one of the key process objectives of this Initiative and reporting on the four indicators discussed above was universal among the projects. However, many aspects of local agency cooperation were not captured by these indicators. For example, cooperation in the Georgia project was so broad-based that 21 different agencies contributed in-kind support. Outreach in the North Carolina breastfeeding project was successful enough to secure local funds for initiation of the project in an additional county. Florida was one of the early States to secure a Memorandum of Understanding with the WIC program to obtain relevant participant data.

---

<sup>3</sup> The 1,932 participants represents an *estimated* number of people served based on the number of contacts by the Texas paraprofessionals in a 6-month period and the usual frequency of clinic visits by WIC clients.

<sup>4</sup> Recruitment goals were based on what projects listed in their initial application. Since South Carolina did not list a goal, the overall recruitment rate, 117 percent, does not take into account data from this State. Exclusion of Texas (due to presenting *estimated* rather than *actual* participation) would result in an overall recruitment rate of 105 percent of the original goal.



Cooperative Extension Service paraprofessionals in Texas taught classes to WIC participants, which is leading to acceptance of paraprofessionals by the Texas WIC Program.

In various States, cooperation reached beyond the WIC Program. In South Carolina, strong links were developed among many State agencies and programs, including Caring for Tomorrow's Children, a program run out from the Governor's office. Several projects, including Guam and Rhode Island, obtained cooperation and provided services to local school systems. Iowa, North Carolina, and Michigan developed community support for breastfeeding, which included cooperation with the local hospitals and health departments. In Nevada, leaders of the community served as advisors to the program. In New York, cooperation between CES and WIC professionals was obtained at both the State and local levels, while in Maryland, the project committee of State and local representatives was bicultural in nature. Many of the States, such as Washington, California, and Minnesota, created interagency task forces to review program development and suggest modifications to curricula.

## Expenditures

For the first year of the ES/WIC Initiative, \$1.43 million dollars were awarded to the 18 competitive projects. Project awards ranged from \$37,000 to \$100,000, averaged about \$80,000, and required a 50-percent match with funds from other sources<sup>5</sup> (table 3). About 73 percent of the Federal funds, or \$1.05 million, awarded for these projects had been spent by the end of the first year. Funds were carried over into the second year of operation for all but three of the projects.

## Project Results

The major goal of this Initiative is to change the behavior and promote the nutritional well being of the neediest WIC participants. To accomplish this, outcome objectives are aimed at increasing knowledge and improving behavior in various areas such as prenatal diets, breastfeeding initiation and duration, meal planning and food selection, purchasing, and preparation. Some of the projects specialized in one main area, while others used a broad-based approach and covered all of the areas. The presentation of results is organized here by topic area. Dietary outcomes of women participants are explored first, followed by sections on breastfeeding, meal planning and food preparation, and other outcomes. A final section summarizes results in these areas.

Many of the projects did not report the results of a statistical analysis of their outcomes, nor the results of comparisons of participant outcomes with those of a control group. For some projects, there was insufficient outcome data to analyze, even though rigorous

---

<sup>5</sup> Federal CSREES funds must be supplemented with at least a 50-percent contribution from other sources. This contribution can come from State, local or private sources or from funds redirected from the Smith-Lever Act, sections 3(b) and (c).

evaluations may have been planned. Many projects used the EFNEP Reporting System, which provides an automated means for keeping track of participant outcomes. However, at this point, statistical analyses are not an integrated option of this system. Although projects were asked to evaluate their outcomes, guidelines for first-year reports did not explicitly ask for statistical analyses. For all these reasons, it was more common for States to omit this information from their reports than to include it. Accordingly, unless otherwise mentioned, the outcomes reported below have not been subjected to statistical analyses nor have they involved the use of control groups.

## **Dietary Outcomes**

**Knowledge.** Most of the projects focused on improving dietary outcomes of participating women and eleven of them advanced to the point of collecting data on the success of these efforts. Eight projects reported information on changes in nutrition knowledge and most of these projects found improvements. But due to differences in measurement tools, a wide variability in results, and a lack of statistical analysis, it is difficult to make conclusions about the degree of improvement in this area.

The California project reported that 23 percent of participants increased their knowledge of the basic food groups needed in a healthy diet and the same percentage learned to realize the importance of nutrition in health (table 4). Both findings were based on answers to single questions. However, the project, which used an effective design, found no significant difference in changes between treatment and control groups. This may be due to the relatively small number of participants who had finished the program by the time the report was written.

Georgia found that 12 percent of teen participants increased their knowledge of the recommended number of servings for all five food groups, compared with no increase in the control group.

Guam reported a statistically significant improvement in knowledge of iron and folate over the course of its intervention program. Based on answers to two questions, average scores improved from 26 percent correct for the pretest to 64 percent for the posttest. Improvement in calcium knowledge, based on answers to two questions, was not significant.

In its breastfeeding promotion project, North Carolina found that 73 percent of participants increased their knowledge of the lactation diet. In the North Carolina prenatal teens project, there was a 21-percent increase in knowledge scores on a 12-item instrument concerning prenatal diet and health.

Oklahoma found that 83 percent of participants increased their knowledge score on a 22-item true/false test regarding prenatal diet and health. For the comparison group, which was given the standard EFNEP curriculum, Eating Right is Basic, 90 percent increased their knowledge scores.



South Carolina adapted and expanded an EFNEP instrument to assess nutrition knowledge. About 22 percent of participants acquired nutrition knowledge as a result of the intervention. There was a significant increase in overall nutrition knowledge of participants over the control group, although the magnitude of this difference was not reported. "Overall nutrition knowledge" included budgeting/buying, food preparation, and storage/sanitation as well as basic nutrition knowledge.

The sensitivity of results to the evaluation instrument is made clear by the work in the Texas project. They reported the percent with increased knowledge on each of 15 questions regarding different aspects of the Food Guide Pyramid and found a range of improvements from 1 to 51 percent, depending on the question asked. This would amount to an average improvement of about 27 percent.

**Behavior.** Ten of the projects also collected information on behavioral changes related to diet. While most of these projects used pre and postintervention 24-hour recalls as measurement instruments, dietary change was reported in different ways. Some of the projects measured changes in all food groups together, whereas other projects focused on changes in single food groups; still others reported changes in terms of nutrients.

Both the California project and North Carolina's breastfeeding project looked at overall dietary patterns by considering changes in food group consumption. California found that 11 percent of their participants improved their diets to include at least one serving from each food group, while only 1 percent of the control group made the same improvement (table 5). However, this difference was not statistically significant, probably due to the small sample size. There was no change in the percent of participants who consumed the recommended number of servings from all food groups. The North Carolina breastfeeding project found 52 percent of its participants improved to include at least one serving from each group and 13 percent improved to consume the recommended servings from all groups.

Other projects, such as the Georgia, North Carolina prenatal, and Nevada projects reported quantitative changes in specific food group consumption. Teen project participants in Georgia increased their average vegetable intakes by 41 percent and their fruit intakes by 107 percent, compared with control group increases of 9 percent and 7 percent for these two food groups. Dairy intake decreased by 12 percent among participants and by 33 percent among the controls.

The North Carolina prenatal teen project reported increases in average vegetable and fruit servings of 5 and 9 percent, respectively. While these changes were not as great as those in the Georgia project, there was improvement in dairy intakes, which increased by 22 percent. Meat servings declined by 9 percent.

Nevada reported increases in average intakes of vegetables and fruits that were more modest than those of Georgia; vegetable consumption increased by 12 percent and fruit consumption by 6 percent. Dairy intakes decreased by about 5 percent, and bread and cereals by 6 percent. Meat servings increased by 13 percent.

Nevada also reported changes in average nutrient intakes, as did the Guam, South Carolina, and New York projects. In Nevada, iron and calcium intakes increased by an average of 2 and 4 percent, respectively. Vitamin C intake increased by 12 percent.

Guam found a statistically significant 93-percent increase in dietary iron intake after intervention. Blood hematocrit values, which can be influenced by dietary iron, were significantly greater for the treatment group postpartum as compared to prenatally. With respect to hematocrit values, there was no corresponding increase for the control group when measured postpartum versus prenatally.

The increase in iron intake of South Carolina's participants—about 43 percent—fell between those of Guam and Nevada. Increases in the intakes of calcium and vitamin C—42 and 23 percent—were also higher than participants in Nevada.

In New York, nutrient intake information was collected for 22 participants who had received at least seven nutrition education lessons. Intake of iron increased by 11 percent, whereas intake of vitamin C increased by 50 percent over the preintervention level. Calcium intake decreased slightly by about 2 percent.

Oklahoma and Rhode Island reported the percentage of individuals with positive dietary changes. In Oklahoma, the percent of individuals who increased their fruit, dairy, and meat intakes was 30, 40, and 70 percent, respectively. The percent of individuals who increased their nutrient intakes of iron, calcium, and vitamin C was 40, 60, and 50 percent, respectively. In Rhode Island, 84 percent of participants reported a positive change in eating habits in any food group.

Also of note is the experiment by the Georgia project on the tasting of new foods. The project found a statistically significant 28-percent increase in the number of nutritious foods tasted at special "taste testing parties" when comparing teen behavior before and after a nutrition education intervention.

### **Breastfeeding Outcomes**

**Knowledge.** Seven of the projects promoted breastfeeding in their first year of operation and two of these projects—California and North Carolina—reported results on knowledge changes in this area. California found that 26 percent of its participants increased their knowledge of breastfeeding as the best way to feed infants, although this was not significantly different from the change in the control group (table 6). The lack of effect may be a result of the instrument used to measure this, since it was based on pre and posttesting of a single question. In North Carolina, 89 percent showed increased knowledge of breastfeeding skills.

**Behavior.** Five of the projects reported results with respect to breastfeeding initiation or duration, although none of the results were analyzed statistically. Georgia found that 23 percent of its participants initiated breastfeeding versus 13 percent in the control group (table 6). In the Guam project, 73 percent of participants initiated breastfeeding versus



61 percent in the control group. The Guam project was less successful at increasing duration of breastfeeding; only 5 percent breastfed for 2 months or more compared with 50 percent in the control group. But, the numbers in both groups were quite small. The Michigan project appeared successful in promoting both initiation and duration. About 83 percent of participants initiated breastfeeding and 43 percent breastfed 2 months or more. In the control counties, only 17 percent breastfed for that long. Part of this difference may be a result of a selection bias; that is, WIC participants who were more likely to breastfeed may have been referred to the Michigan program in greater numbers than those less likely to breastfeed. In North Carolina, the 2-month duration rate was 59 percent, higher than the expected rate of 50 percent. In Rhode Island, 10 percent of participants breastfed for 2 months or more.

### **Meal Planning and Food Preparation Outcomes**

**Knowledge.** As one facet of their interventions, five States chose to emphasize the importance of traditional EFNEP subjects, including meal planning, food shopping, and preparation. A variety of instruments and indicators were used to gauge participants' knowledge gain as a result of an intervention.

Georgia reported a larger increase in the percentage of control participants demonstrating knowledge of meal planning and food selection than in the treatment group, 66 percent versus 28 percent (table 7).

Nevada used the EFNEP Behavior Checklist instrument, and reported a wide range in the percentage of participants who demonstrated improvement on a particular indicator—from 28 percent indicating improved knowledge of safe food storage methods to 70 percent demonstrating an improvement in knowing the appropriate way to thaw foods.

North Carolina's pregnant adolescent project devised its own evaluation instrument entitled "Hey, Whadda Ya Think...?" Selected questions from this instrument were used to obtain knowledge scores in the area of food selection, purchasing and preparation. North Carolina reported a 14-percent increase in scores from before to after the intervention.

Rhode Island used selected questions from an EFNEP Knowledge Survey to measure how well its intervention contributed to achieving specific knowledge goals related to food budgeting, preparation, and label reading. From 51 percent to 77 percent of participants demonstrated improvement in specific knowledge indicators.

South Carolina used an EFNEP Food Behavior and Nutrition Knowledge instrument developed by Cornell University. For garnering information on participants' knowledge, this Cornell survey form was supplemented by a questionnaire developed by the project's personnel. This project reported that 23 percent of participants acquired knowledge with respect to food budgeting and buying. There were sizable numbers of participants who acquired knowledge in food preparation (11 percent) and food storage/sanitation procedures (66 percent).

**Behavior.** Four projects collected information on behavior changes related to meal planning and food preparation. The EFNEP Behavior Checklist instrument, the one used by Nevada to gauge participants' change in knowledge, was used by Minnesota and Rhode Island to measure the extent to which participants reported acquiring selected behaviors. Minnesota analyzed changes in participants' meal planning, food shopping, and food safety practices using pre and postintervention differences. A number of positive changes were reported. For example, the percent of individuals who planned meals "most of the time" or "almost always" increased from 32 to 60 percent. Participants in the Rhode Island project showed improvement in food safety practices (50 percent) and in one or more food management skills (81 percent).

New York used the Cornell University-devised Food Behavior and Nutrition Knowledge Survey to gauge improved or sustained desired practices in the areas of food budgeting, food preparation, and food safety. The objective in this project was for 80 percent of the participants to report improved behaviors pertaining to these areas. With the small sample of participants having completed the program (N=22), this goal was reported as being achieved.

South Carolina used the Cornell Food Behavior and Nutrition Knowledge Survey to observe participant improvement in acquiring behaviors in the areas of budgeting, food preparation and food sanitation. South Carolina reported that the treatment group showed a statistically significant gain in demonstrating food preparation behaviors compared with the control group.

### **Other Outcomes**

Enhancing knowledge of prenatal or parenting practices was an objective that four States selected to promote the nutritional health of children. For the Georgia project, knowledge of parenting practices was related to participants' response to one specific question as to when to start a baby on solid foods. Although 57 percent of the participants from both the treatment and control groups indicated the correct answer at posttest, this represented a 28-percent increase for the treatment group, and no change for the control group from pretest.

Oklahoma used its own instrument to evaluate changes in both attitude and knowledge scores on this topic. The report indicates that 83 percent of the treatment group demonstrated an increased knowledge score, as opposed to 90 percent in a comparison group. Similarly, 100 percent of the treatment group attained an increased attitude score, from pre to posttest, as opposed to 70 percent in the control group.

Based on data from two questions on an EFNEP Knowledge Survey, Rhode Island reported that 57 percent of the treatment participants increased their knowledge of parenting practices. South Carolina reported that there was no significant difference in parenting knowledge between treatment and control groups.



Three States also attempted to measure the impact of their projects on biological outcomes such as prenatal weight gain or birth weight. The data in this area, however, are too preliminary to draw any conclusions.

## Summary of Project Results

While there are some hopeful signs, it is too early in the development of projects under the ES/WIC Initiative to make definitive statements about project results. This section summarizes the progress made in effecting dietary, breastfeeding, meal planning, and other outcomes.

Eight of the projects reported that many of their participants made improvements in knowledge of a healthy diet; the percent improving varied widely, ranging from 2 to 83 percent, depending on the specific measure of knowledge. But few projects analyzed their results statistically or made appropriate use of control groups. California, which did both, did not find a statistically significant improvement of treatment group over controls, although this may have been due in part to a small sample size. South Carolina did find a significant improvement in knowledge of participants over controls, although the magnitude of the improvement was not reported.

The mosaic of results presented by the nine projects that collected data on dietary behavior changes also precludes making any definitive statement about the overall Initiative. Projects reported dietary changes either in the consumption of particular foods, in the consumption of all foods, or in the consumption of particular nutrients. And, the changes reported were based either on averages for the entire group or on the frequency of change by individuals. Most of the projects found positive changes, but the meaning of these results is unclear, since in addition to the diverse manner of reporting results, few analyzed their results statistically. Guam did find a statistically significant increase in dietary iron intake of teen participants from 47 to 91 percent of their RDA. Georgia found a significant improvement in teens' willingness to try nutritious foods as evidenced by behavior at food-tasting parties.

Breastfeeding promotion was an activity of many of the projects, but due to the nature of the intervention and outcome, few of the projects were to the point of reporting on such outcomes. Three projects reported on initiation rates, which varied from 23 percent for Georgia to 73 and 83 percent for Guam and Michigan, respectively. The first two projects compared favorably with control group rates, although the results were not analyzed statistically. Four projects collected data on 2-month duration rates for breastfeeding; these ranged from 5 to 59 percent.

All five States that collected knowledge outcome data on meal planning and food preparation skills reported pre-to-posttest increases in the percentage of treatment group participants demonstrating such knowledge. However, these positive results should be considered tentative since no statistical analyses were reported and three of the four States that cited use of a control group did not report any data for these participants.

Further complicating the summary of results is the fact that each State used a different evaluation instrument. Four States obtained behavior outcome data in this area, two of which—Minnesota and South Carolina—reported a statistically significant percentage of participants who demonstrated improvement. New York and Rhode Island also reported treatment group improvement, but provided no statistics.

In the area of prenatal and parenting practices, three States reported that treatment group participants demonstrated an increase in their knowledge; however, statistics were not presented. A fourth State, South Carolina, reported no statistically significant difference in parenting knowledge between treatment and control groups.

### **Conclusions**

Significant progress has been made in the first year of the ES/WIC Nutrition Education Initiative. All of the projects targeted difficult-to-reach WIC participants. Extensive development of educational interventions began for most projects with needs assessments through focus groups, surveys, or other means. Innovative educational curricula, teaching and training materials, as well as evaluation and outreach instruments were developed. As a whole, projects have been successful in meeting one of the main objectives of the Initiative: to enhance interagency cooperation between the Cooperative Extension System and State WIC programs. Joint training sessions were held between CES and WIC in all but two of the 18 projects. All but one of the projects had a referral system between the two organizations in place. Every competitive project in this Initiative benefited from an advisory committee composed of CES, WIC, and usually other professionals or community members. Overall, the number of people served by this Initiative was above the goals set out in the projects' proposals.

Although the first year of this Initiative was originally intended to be a developmental phase, many of the State projects not only began implementation but collected outcome data. Of the 18 competitive projects, outcome data were collected in 13. As discussed in the summary of project results, it is too early in the development of this Initiative to make definitive statements about project results. Considerable progress was made and many of the projects found positive changes in either dietary intake, infant feeding, or food preparation behaviors. However, the meaning of these results is unclear, since few projects performed statistical analyses to determine whether knowledge or behavior changes were a result of the intervention or simply due to chance. Even less frequently did projects appropriately compare changes with those of a control or comparison group. In addition, reporting of results in dissimilar ways has made it difficult to summarize outcomes for the entire Initiative. For example, although nine projects collected dietary data using essentially the same evaluation instrument, five different methods for reporting these results were used.

Opportunities exist to improve the overall evaluation of this Initiative by focusing on local-level evaluation. Performing statistical analyses of results at the local level as well as the use of control or comparison groups could strengthen the inferences made regarding



project outcomes. Reporting of results in a standard way would also facilitate generalization across projects. The projects have been advised of these recommendations and are receptive to strengthening their local evaluations, where it is needed, for future reporting cycles.

## References

Anderson, J., and P. Kendall. *La Cocina Saludable: Using Long Distance Learning and Abuelas to Teach Low Income Hispanics and Migrants*. Final Report on Project #93-ENED-1-7502. Fort Collins, CO: Colorado State University; 1994.

Anliker, J.A. *Infant Feeding for Hispanic WIC Populations: A Peer Education Model. Un Bebe Saludable: Un Regalo Muy Especial*. Final Report on Project #93-ENED-1-7507. College Park, MD: University of Maryland; 1994.

Benedict, J., and J.M. Woodson. *Meeting the Nutrition Education Needs of Hispanics in Nevada*. Final Report on Project #93-ENED-1-7510. Reno, NV: University of Nevada; 1994.

Brink, M.S., and S. Grogan-Enanoria. *Building Blocks for Toddlers*. Final Report on Project #93-ENED-1-7511. Ithaca, NY: Cornell University; 1994.

Butkus, S. and L. Hammond. *Parents and Children Growing Together*. Final Report on Project #93-ENED-1-7517. Kennewick, WA: Washington State University; 1994.

Cameron, B.A., and E. Schafer. *Building a Peer Network of Nutrition and Breastfeeding Support for Rural Iowans*. Final Report on Project #93-ENED-1-7506. Ames, Iowa: Iowa State University; 1994.

Cook, L.D. *Addressing the Nutrition and Health Needs of Haitian Women Who Are Pregnant, Breastfeeding, and/or Mothers of Children Under Five*. Final Report on Project #93-ENED-1-7503. Gainesville, FL: University of Florida; 1994.

Ikeda, J.P. *Culturally Relevant Nutrition Education for Vietnamese WIC-Eligible Women in California*. Final Report on Project #93-ENED-1-7501. Berkeley, CA: University of California; 1994.

Ladewig, K. *Madres y Niños Mejores*. Final Report on Project #93-ENED-1-7616. College Station, TX: Texas A&M University; 1994.

McCloud-Harrison, J. *TAMS Integrated Nutrition and Health Program*. Final Report on Project #93-ENED-1-7504. Athens, GA: University of Georgia; 1994.

Mutch, B., M. McConnell, and C. McKay. *Michigan Extension/WIC Breastfeeding Support Nutrition Education Initiative*. Final Report on Project #93-ENED-1-7508. East Lansing, MI: Michigan State University; 1994.

O'Gorman, S. *Nutrition...Making Life Healthy*. Final Report on Project #93-ENED-1-7509. Detroit Lakes, MN: University of Minnesota; 1994.

Pobocik, R.S. *Early Experiences and Counseling for Effective Lactation (EXCEL)*. Final Report on Project #93-ENED-1-7505. Mangilao, Guam: University of Guam; 1994.

Sebelia, L. *WIC/EFNEP Southeast Asian Nutrition Education Initiative*. Final Report on Project #93-ENED-1-7514. Providence, RI: University of Rhode Island; 1994.

Sharman, K.L., and B.J. Thames. *Nutrition Education For Women (NEW)*. Final Report on Project #93-ENED-1-7515. Clemson, SC: Clemson University; 1994.

Van Eck, N. *North Carolina Special Program Expansion: Breastfeeding Support Project*. Final Report on Project #93-ENED-1-7512. Raleigh, NC: North Carolina State University; 1994.

Van Eck, N. *North Carolina Special Program Expansion: Pregnant Adolescent Program*. Final Report on Project #93-ENED-1-7512. Raleigh, NC: North Carolina State University; 1994.



Table 1—Summary of competitively-awarded projects in the ESWIC Nutrition Education Initiative<sup>1</sup>

State	Project title	Target population	Educational Intervention	Stage <sup>2</sup>
CA	Culturally Relevant Nutrition Education for Vietnamese WIC-Eligible Women in California	Urban Vietnamese	Culturally adapted EFNEP curriculum	Enr
CO	Using Abuelas to Teach Low-Income Hispanics and Migrant Farm Workers	Rural Hispanics	Distance learning for professionals, para-professionals; Culturally adapted education delivered by grandmothers	Dev
FL	Addressing Nutrition Needs of Haitian Women, Pregnant and Breastfeeding	Haitian	New curriculum, materials for Haitians	Dev
GA	TAMS Integrated Nutrition and Health Program	Prenatal teens	After school classes, group activities, home visits	Out
GU	Early Experiences and Counseling for Effective Lactation (EXCEL)	Teen Pacific Islanders	School & WIC classes, inter-generational at-home teaching	Out
IA	Building a Peer Network of Nutrition and Breastfeeding Support for Rural Iowans	Rural	Peer counseling using WIC, EFNEP materials	Enr
MD	Infant Nutrition for Hispanic WIC Population: A Peer Education Model	Hispanic	Peer education focusing on infant feeding practices	Dev
MI	Michigan Extension/WIC Breastfeeding Support Nutrition Education Initiative	Rural, Urban	Breastfeeding peer support program, home visits, incentives	Out
MN	Nutrition...Making Life Healthy	Rural, Native American, teens	Group, individual sessions focusing on 5 videos and 1 food laboratory	Out
NV	Meeting the Nutrition Education Needs of Hispanics in Nevada	Hispanics	Culturally adapted EFNEP curriculum ("Eating Right is Basic")	Enr

<sup>1</sup> Based on information from Year 1 Final Reports submitted by the State projects.

<sup>2</sup> Those projects developing materials essential to their operation are in a "development" phase (Dev). Those who have enrolled less than 1/2 their goal or have outcome data on a limited number are in the "enrollment" phase (Enr). Those projects which have outcome data on at least 1/4 of the intended goal are in the "outcome" phase (Out). These categorizations are somewhat arbitrary and are meant only to give a qualitative impression of the development stage.

Table 1— Summary of competitively-awarded projects in the ES/WIC Nutrition Education Initiative (Cont.)<sup>1</sup>

State	Project title	Target population	Educational Intervention	Stage <sup>2</sup>
NY	Building Blocks for Toddlers	New mothers of toddlers	Individual, group sessions, parent mentoring	Enr
NC	NC Special Programs Expansion: Breastfeeding Support	Rural, Urban	Breastfeeding support--at home, in the hospital	Out
NC	NC Special Programs Expansion: Pregnant Adolescent	Prenatal teens	Teen nutrition education curriculum	Enr, Out
OK	Pregnant Teens Enrolled in the Chickasaw Nation WIC Program	Prenatal teens, Native Americans	Adapted curricula: "Have a Healthy Baby," "Eating Right is Basic"	Enr
RI	Southeast Asian Nutrition Education Initiative	Cambodian	Videos, breastfeeding support, home visits	Out
SC	Nutrition Education for Women (NEW)	Rural	Augmented services for "Healthy Start," "Caring for Tomorrow's Children" Programs	Out
TX	Madres y Niños Mejores (Better Mothers and Children) Project	Hispanics, African Americans	Compact disc-TV modules, group sessions	Dev, Enr
WA	Parents and Children Growing Together	Rural Hispanics, others	Classes, groups with critical thinking, problem-solving methods	Enr

<sup>1</sup> Based on information from Year 1 Final Reports submitted by the State projects.

<sup>2</sup> Those projects developing materials essential to their operation are in a "development" phase (Dev). Those who have enrolled less than 1/2 their goal or have outcome data on a limited number are in the "enrollment" phase (Enr). Those projects which have outcome data on at least 1/4 of the intended goal are in the "outcome" phase (Out). These categorizations are somewhat arbitrary and are meant only to give a qualitative impression of the development stage.

Table 2—Educational materials and curricula produced in the first year of the ESWIC Nutrition Education Initiative

State	Type of Material <sup>1</sup>	Description
CA	Educ	EFNEP curriculum culturally adapted to Vietnamese-Americans: "Nutrition for a Healthy Mother and Baby"
	Eval	Infant feeding practices, nutrition knowledge pre/posttest in Vietnamese
	Mrkt	Promotional flyers in English, Vietnamese
CO	Train	Nutrition education resource book for Hispanic grandmothers. Correspondence course for professionals, paraprofessionals: "Nutrition and the Preschool Child"
	Educ	Nutrition education program: "La Cocina Saludable-The Healthy Kitchen"; Videos: "Developing Children's Eating Habits"; "Planning Healthy Meals for Children"; and "Safe Food Habits in the Child Care Environment"
FL	Educ	Videos: "Adequate Weight Gain"; "Making the Right Food Choices"; "Breastfeeding"; "Practicing Good Health Habits"
GA	Educ	Curriculum developed for teens
	Eval	Multiple choice pre/post tests ("Pencil Fun") to assess nutrition knowledge, Likert-scale questionnaire to assess nutrition-related attitudes
GU	Educ	Video: "Breastfeeding, the Natural Beginning"
	Eval	Revised Eating Right is Basic 2 (ERIB2) instruments using word/picture format
IA	Train	Handbook for peer breastfeeding counselors
	Educ	Interactive flipchart: "Consider Breastfeeding," revised Idaho's "Breastfeeding Basics" brochure
MD	Train	Peer educator's manual
	Educ	Infant feeding curriculum with Spanish/English materials, including baby feeding calendar, monthly tip sheets
	Eval	Questionnaire to study knowledge, beliefs, practices on infant feeding of Central/South American Hispanics
MI	Educ	Module on prenatal nutrition and breastfeeding
	Eval	"Community Support for Breastfeeding" questionnaire, "Do You Know" breastfeeding knowledge & skills pre/posttest, "Breastfeeding Peer Counselor Follow-up Training Plan Check List," Client Exit Evaluation of Counselor

<sup>1</sup> Educ = Educational material; Eval = Evaluation instrument; Mrkt = Marketing or promotional tool; Train = Training material



Table 2—Educational materials and curricula produced in the first year of the ES/WIC Nutrition Education Initiative (Cont.)

State	Type of Material <sup>1</sup>	Description
MN	Educ	Videos: "Smart Shoppers"; "Food Safety at Home"; "Quality Low Cost Meals: Using Commodity Food"; "Quality Low Cost Meals: Food Preparation Methods"; and "The Food Guide Pyramid."
NV	Educ	Translated lessons, handouts from ERIB2 into Spanish
	Mrkt	Recruitment pamphlet
NY	Educ	Curriculum for first-time parents of toddlers: "Building Blocks for Toddlers (BBT)," BBT Parent/Toddler activity sheets Updated catalog of materials on food spending, shopping, etc: "More From Your Money"
	Eval	Diagnostic report, toddler food record
	Mrkt	Recruitment pamphlet in English, Spanish
OK	Eval	Pre/posttest knowledge, belief instruments for pregnant teens
NC	Educ	18-lesson prenatal teen curriculum (adapted from Georgia's TAMS): "Hey What's Cookin'?"
	Eval	Evaluation instrument for "Hey What's Cookin'?"
RI	Educ	EFNEP curriculum adaptation to Cambodian-American audience including "Cambodian Food Guide Pyramid," "Food Rich in Iron." Video: "Sophie's Choice," soap opera format promoting breastfeeding for Cambodian-American audience which includes commercials on breastfeeding, infant feeding.
SC	Educ	Adapted, developed materials on parenting, money management
	Mrkt	Outreach flyers, radio public service announcements, newspaper articles
TX	Educ	Spanish/English low-literacy interactive compact disk modules: "Food Guide Pyramid"
	Eval	Computer-scannable pre/posttests
WA	Educ	EFNEP curriculum expanded to include lessons on feeding children, money management, communications, family relationships, health consumer skills, safety, and stress management.

<sup>1</sup> Educ = Educational material; Eval = Evaluation instrument; Mrkt = Marketing or promotional tool; Train = Training material

Table 3—Cooperation, participation, and expenditures in the first year of the ES/WIC Nutrition Education Initiative<sup>1</sup>

State	Interagency cooperation						Expenditures					
	Joint training sessions	WIC clinics referring	Participation			Inter-agency advisory committee	Budgeted		Expended <sup>3</sup>			
			Goal	Served	Exited <sup>2</sup>		Federal	Match				
										Total	Match	Total
			-----Number-----			-----Dollars-----			-----Dollars-----			
CA	3	3	≥ 200	118	30	yes	99800	50000	149800	56210	-	-
CO	13	10	35	0	0	yes	97765	49088	146853	97766	-	-
FL	0	0	0	0	0	yes	89892	47560	137452	30671	-	-
GA	4	1	80	43	37	yes	57380	28690	86070	47260	26424	73684
GU	7	6	45	47	47	yes	73460	36730	110190	72516	-	-
IA	7	2	300	116	5	yes	61923	30962	92885	41258	20629	61887
MD	2	2	100	0	0	yes	89004	45225	134229	50445	56225	106670
MI	8	8	400	474	199	yes	74588	37294	111882	80495	39480	119975
MN	3	2	612	613	470	yes	37000	18632	55632	24079	16486	40565
NV	0	3	225	109	50	yes	100000	50000	150000	58089	29271	87360
NY	6	3	150	83	22	yes	94500	80415	174915	58852	51201	110053

<sup>1</sup> Information based on first-year annual reports submitted by the State projects, except for participation goals and budgeted amounts, which were taken from original grant applications.

<sup>2</sup> The number exited refers to the number of participants who have completed the intervention and for which outcome data exist.

<sup>3</sup> Most States did not distinguish between Federal and matching expenditures on their first-year reports. If not broken out separately, expenditures were assumed to be from Federal funds.

Table 3—Cooperation, participation and expenditures in the first year of the ES/WIC Nutrition Education Initiative (Cont.)<sup>1</sup>

State	Interagency cooperation					Expenditures				
	Joint training sessions	WIC clinics referring	Participation			Budgeted		Expended <sup>3</sup>		
			Goal	Served	Exited <sup>2</sup>	Federal	Match	Federal	Match	Total
			-----Number-----			-----Dollars-----			-----Dollars-----	
NC	7	3	270	470	453	98357	50000	47657	-	-
NC <sup>4</sup>	10	2	190	82	61	-	-	30417	-	-
OK	12	5	250	87	29	100000	50000	92607	-	-
RI	9	3	50	47	30	61962	36688	51118	29350	80468
SC	4	4	na	108	64	100000	50312	100000	-	-
TX	17	3	1200	1932	0	98000	50000	60404	-	-
WA	6	2	600	1281	0	98842	50000	45749	49156	94905
Totals	118	62	4707	5610	1497	1432473	761596	1045233	-	-

<sup>1</sup> Information based on first-year annual reports submitted by the State projects, except for participation goals and budgeted amounts, which were taken from original grant applications.

<sup>2</sup> The number exited refers to the number of participants who have completed the intervention and for which outcome data exist.

<sup>3</sup> Most States did not distinguish between Federal and matching expenditures on their first-year reports. If not broken out separately, expenditures were assumed to be from Federal funds.

<sup>4</sup> The North Carolina CES operates two projects, a breastfeeding promotion project and a pregnant adolescent project. The projects were initially funded as one, but were split for administrative purposes.



Table 4—Selected dietary knowledge outcomes in the first year of the ES/WIC Nutrition Education Initiative

State	Outcomes	Design considerations <sup>1</sup>		
		Statistics	Tx N	Ctrl N
CA	23% increased their knowledge of basic food groups needed (vs. 28% of controls) 23% realized importance of nutrition in health (vs. 6% in controls)	NSD	30	20
GA	12% increased their knowledge of recommended servings from all groups (vs. 0% for controls)	NS	37	NA
GU	<b>144% Increase in scores on knowledge of iron and folate</b> 16% increase in scores on knowledge of calcium	SIG, NC NSD, NC	47	48
NC	73% increased knowledge of lactation diet	NS, NC	473	
NC	21% increase in scores on knowledge of prenatal diet	NS, NC	61	
OK	83% increased knowledge score (vs. 90% in comparison group)	NS	18	10
SC	22% increased their nutrition knowledge. <b>Treatment group increased nutrition knowledge (unspecified amt) more than control</b>	NS, NC SIG	64	NA
TX	27% (on average) increased their knowledge of Food Guide Pyramid (1% - 51%) on 15 separate questions.	NS, NC	1932	

<sup>1</sup> Tx N = Number in treatment group

Ctrl N = Number in control group

NSD = Not significantly different (treatment vs control)

SIG = Significant result. Results in bold-face were reported as statistically significant.

NS = No statistics presented

NC = No control group

NA = Information not available

Table 5—Selected dietary behavior outcomes in the first year of the ES/WIC Nutrition Education Initiative

State	Outcomes	Design considerations <sup>1</sup>		
		Statistics	Tx N	Ctrl N
CA	11% increase in those consuming ≥ 1 serv from each food group (vs. 1% in controls) No change in those consuming recommended serv from each food group (vs. 25% fewer controls)	NSD	30	20
GA	41-107% increase in average vegetable, fruit intakes vs. 7-9% increase for controls 12% decrease in average dairy intake vs. 33% decrease for controls <b>28% Increase in average number of nutritious foods tasted (4.8 to 6.2 foods)</b>	NS SIG, NC	37	NA
GU	<b>93% Increase in average dietary iron (47% to 91% of RDA)</b>	SIG, NC	47	48
NV	5-6% decrease in average dairy, bread/cereal intakes 6-13% increase in average fruit, vegetable, meat intakes 2% increase in average iron intake (82 to 84% of RDA) 4% increase in average calcium intake (72 to 75% of RDA) 12% increase in average vitamin C intake (84 to 94% of RDA)	NS, NC	48	
NY	11% increase in average iron intake (72 to 80% of RDA) 2% decrease in average calcium intake (83 to 82% of RDA) 50% increase in average vitamin C intake (81 to 122% of RDA)	NS, NC	22	
NC	52% improved to at least 1 serving per food group (42% pre vs. 94% post) 13% improved to recommended servings from all food groups (3% pre vs. 16% post)	NS, NC	31	
NC	5-22% increase in average vegetable, fruit, dairy intakes 9% decrease in average meat servings	NS, NC	42	

<sup>1</sup> Tx N = Number in treatment group  
Ctrl N = Number in control group  
NSD = Not significantly different (treatment vs control)  
NS = No statistics presented  
NC = No control group  
NA = Information not available

Table 5—Selected dietary behavior outcomes in the first year of the ES/WIC Nutrition Education Initiative (Cont.)

State	Outcomes	Design considerations <sup>1</sup>		
		Statistics	Tx N	Cntrl N
OK	30-70% increased their fruit, dairy, meat intakes (vs. 33-44% in comparison group) 40% increased their iron intakes (vs. 22% in comparison group) 60% increased their calcium intakes (vs. 44% in comparison group) 50% increased their vitamin C intakes (vs. 89% in comparison group)	NS	10	9
RI	84% positive eating change (in ≥ 1 group). 23% achieved 3-1-1-1-1 food pattern; 0% achieved 6-2-3-2-2.	NS, NC	27	
SC	42% increased intake of calcium (67 to 95% of RDA) 43% increased intake of iron (53 to 76% of RDA) 23% increased intake of vitamin C (133 to 164% of RDA)	NS, NC	64	NA

<sup>1</sup> Tx N = Number in treatment group  
 Ctrl N = Number in control group  
 NSD = Not significantly different (treatment vs control)  
 NS = No statistics presented  
 NC = No control group  
 NA = Information not available



Table 6—Breastfeeding outcomes in the first year of the ES/WIC Nutrition Education Initiative

State	Outcomes <sup>1</sup>	Design considerations <sup>2</sup>		
		Statistics	Tx N	Ctrl N
CA	K: 26% increased knowledge of BF as best way to feed infants (vs. 30% in control group) K: 7% increased knowledge of 2 reasons why BF is good for babies (vs. 10% in control group)	NSD NSD	30	20
GA	A: Overall no change in attitudes toward BF in project or comparison group B: 23% initiated BF (vs. 13% in control group)	ND NS		
GU	B: 73% initiated BF (vs. 61% in control, 12% of all-aged WIC) B: 74% BF 2 weeks or more (vs. 93% in control) B: 5% BF 2 months or more (vs. 50% in control)	NS	26 19	23 14
MI	B: 83% initiated BF B: 78% BF 2 weeks or more B: 43% BF 2 months or more (vs. 17% in control or 18% statewide)	NS, NC NS	58 157	2387 9348
NC	K: 89% showed increased knowledge of BF skills B: 93% BF 2 weeks or more (80% expected) B: 59% BF 8 weeks or more (50% expected)	NS, NC NS	453 413 352	
RI	B: 40% (of 30) BF for 2 weeks or more B: 10% (of 30) BF for 2 months or more	NS, NC	30	

<sup>1</sup> K, A, and B represent outcomes which result in knowledge, attitude, or behavior changes, respectively.

<sup>2</sup> Tx N = Number in treatment group

Ctrl N = Number in control group

NSD = Not significantly different (treatment vs control)

NS = No statistics presented

ND = No data presented

NC = No control group

NA = Information not available

BF = Breastfeeding

Table 7—Selected meal planning and food preparation outcomes in the first year of the ESWIC Nutrition Education Initiative

State	Outcomes <sup>1</sup>	Design considerations <sup>2</sup>		
		Statistics	Tx N	Ctrl N
GA	K: 28% increased their knowledge of meal planning/food selection (vs. 66% in control group)	NS	37	NA
MN	B: 28% Increased meal planning to most of the time or almost always B: 50% changed behavior to seldom or not at all thaw foods at room temperature B: 23% Increased comparison of food prices before purchasing to most of the time	SIG, NC	470	
NC	K: 14% increase in scores on knowledge of food selection, purchasing, and preparation	NS, NC	61	
NV	K: 54% demonstrated improvement in planning needs in advance K: 54% demonstrated improvement concerning price comparison shopping K: 70% demonstrated improvement on using appropriate methods to thaw food	NS, NC	48	
NY	B: 90% acquired desired budgeting/buying practices B: 86% acquired desired food preparation practices B: 86% acquired desired storage/safety/sanitation practices	NS, NC	22	
RI	K: 61% increased their ability to plan nutritionally balanced meals/menus K: 60% increased their ability to handle food safely B: 50% demonstrated acceptable food safety practices B: 81% demonstrated improvement in one or more food management practices	NS, NC	27	
SC	K: 23% increased knowledge of budgeting/buying practices K: 11% increased knowledge of food preparation skills K: 56% increased knowledge of food storage/sanitation practices. B: Treatment group improved food preparation behaviors (unspecified amount) more than control	NS, NC  SIG	64	NA

<sup>1</sup> K, A, and B represent outcomes which result in knowledge, attitude, or behavior changes, respectively.

<sup>2</sup> Tx N = number in treatment group; Ctrl N = number in control group; NSD = Not significantly different (treatment vs control); NS = No statistics presented; ND = No data presented; NC = No control group; NA = Information not available

**Appendix: Executive Summaries from the First Year Final Reports**



## **Executive Summary:**

**State:** California

**Title of Project:** Culturally Relevant Nutrition Education for Vietnamese WIC-Eligible Women

**Project Director's Name and Phone Number:** Joanne P. Ikeda, MA, RD (510) 642-2790

### **Target Population:**

Low-income, non-English speaking Vietnamese women who meet at least one of the following criteria: 1) are pregnant or parenting adolescents; 2) are pregnant or post-partum up to 6 months; 3) are parenting children up to 3 years; and who are living in Santa Clara, Sacramento or San Francisco counties.

### **Objectives:**

I. University of California Cooperative Extension (UCCE) will increase interagency cooperation related to nutrition education in order to reach an increased number of women in the target population.

II. Women in the target population will demonstrate 1) increased nutrition knowledge, 2) more positive attitudes about the relationship of nutrition to health, and 3) improved food practices as a result of their participation in the UCCE Vietnamese Nutrition Education Program.

### **Intervention:**

An Advisory Council consisting of State and County WIC and CE staff was formed and met in September of 1993. The Council decided how to best foster collaboration and cross referral at the county level. A series of joint inservice training meetings on the Food Habits, Practices and Health Beliefs of Vietnamese Women were planned. Two bilingual, bicultural Vietnamese Nutrition consultants were hired at the state level to assist with the training meetings and to adapt nutrition education materials for use in this program. Three bilingual, bicultural paraprofessional Vietnamese women were hired and trained as Nutrition Education Assistants (NEA's) at the county level. The training meetings on the Food Habits, Practices, and Health Beliefs of Vietnamese women were held in three key locations - altogether, 20 WIC and 23 CE staff attended. A follow-up evaluation documented that most staff learned many new facts and felt more confident about doing nutrition counseling with Vietnamese women as a result of the training.

Using referrals from WIC and other community organizations, the NEA's have recruited 118 Vietnamese women to participate in the program. The NEA made a "home visit" to enroll each woman separately. During the enrollment process, the woman was interviewed about her nutrition knowledge, attitudes and practices. A food recall on what the woman had to eat in the last 24 hours was also recorded by the NEA. The woman subsequently received a series of 6 to 8 nutrition lessons delivered by the NEA. These lessons were delivered one-to-one during home visits, or in small groups with other Vietnamese women. At the end of the series, the woman was interviewed again regarding knowledge, attitudes and practices and a second 24-hour food recall was taken. (For research purposes, some women were placed on a "waiting list control-group". The evaluation instruments were administered at the beginning and end of the "waiting period", then the woman was enrolled in the program. When she graduated, the instruments were administered a third time.)

#### Results:

Interagency cooperation was increased between UCCE, WIC and other agencies. Joint training sessions were successful in increasing the knowledge and confidence of nutrition educators in counseling Vietnamese women. Linkages were made with a number of community agencies serving the needs of low-income non-English speaking Vietnamese county residents. In addition to increasing referrals for this project, county residents not eligible for this particular project were referred to other agencies for assistance.

To date, 118 women have enrolled in the program. Of these, 30 have graduated from EFNEP. One client has moved from the county. All the rest are expected to complete the program.

The direction of change in the treatment group is consistently positive. With increased numbers in both treatment and control groups, we are hoping that this change will be statistically significant.

## **II. EXECUTIVE SUMMARY**

**STATE:** Colorado

**TITLE OF PROJECT:** Using Abuelas (Hispanic Grandmothers) to Teach Low-Income Hispanics and Migrant Farm Workers

**PROJECT DIRECTORS' NAMES AND PHONE NUMBERS:** Jennifer Anderson, Ph.D., R.D. (303-491-7334); Patricia Kendall, Ph.D, R.D. (303-491-7334)

**TARGET POPULATION:** There are 3 categories of target population: 1) nutrition and health care professionals and paraprofessionals who work with low-income Hispanics; 2) Abuelas who are family and community leaders; and 3) low-income Hispanic women including women of migrant farmworker families who qualify for WIC assistance. This project will sequentially target these populations in three areas of southern Colorado over a three year period.

**OBJECTIVES:** The overall goal of this project is to develop a multi-faceted nutrition education program that targets low-income Hispanic women and children with emphasis on migrant farm worker families in specified areas of southern Colorado. This target population represents a group of "neediest" persons in the Special Supplemental Food Program for Women, Infants and Children (WIC) in Colorado. Participating individuals will acquire the knowledge, skills and behaviors that contribute to nutritionally sound diets and a healthy lifestyle. Because of lack of available nutrition education for professionals in this geographically isolated area, professionals, paraprofessionals, and volunteers (Abuelas or Hispanic grandmothers) also will be targeted for nutrition education training. They, in turn, will assist in the nutrition education of low-income Hispanic and migrant women and children.

**INTERVENTION:** There are three stages of nutrition education in this project. First, area professionals and paraprofessionals will participate in a series of four 4-hour workshops using a combination of interactive video, videotape, correspondence study and hands-on workshop formats. A revised version of an existing Colorado State University correspondence class, "Nutrition and the Preschool Child", will be used as the student notebook for the workshop series. The purpose of the series will be to train professionals and paraprofessionals to provide sound and consistent nutrition education to low income Hispanics. The professionals and paraprofessionals will also serve as advisors to the Abuela educators who will educate the low income Hispanics and migrants.

The second level of nutrition education will train Abuela educators to deliver a 5-unit nutrition education program to the targeted population. The units include 1) Incorporating the Dietary Guidelines and the Food Guide Pyramid into Meals and Snacks, 2) Feeding Children Including Healthy Snacks, 3) Modifying Recipes and Food Preparation for a Healthy Diet, 4) Safe Food Handling and Storage, and 5) Getting the Most Out of Food Dollars. Abuelas were chosen due to their position of



leadership and respect in the Hispanic community and family in areas of health, family and nutrition. The Abuela training involves a combination of presentations, individual learning using a resource book, hands-on learning activities, supplemental videos, cultural sensitivity training, and training in teaching and evaluation techniques.

The third level of nutrition education involves the trained Abuelas educating the targeted population. The education involves the same five nutrition units using a portable, attractively designed flip chart and corresponding 3-dimensional Food Guide Pyramid. These teaching tools use limited words in both Spanish and English, food photographs and simple illustrations. Additionally, the participants will receive recipe cards as well as creative "reminders" of the nutrition messages in the form of useful kitchen utensils on which the five nutrition messages have been imprinted.

**RESULTS:** During the developmental year 10 focus groups involving all three populations were conducted. These focus groups provided direction for program development and implementation. Among the focus groups with low-income Hispanics and migrants a number of obstacles to acquiring nutrition related skills and information surfaced. These included receipt of conflicting nutrition information; non-useful pamphlets and other written materials; inconvenient programs with respect to time, location, childcare, and transportation; and lack of availability of information. Characteristics of desirable nutrition education programs cited included socially-oriented small group settings, supplemental videos, respected instructors, hands-on activities, and "take-home items" that would be useful after the class was completed such as recipes and kitchen utensils.

During this phase of the project, educational materials for all three phases of the project have been developed. The four session workshop series was piloted with 36 WIC, CSFP, Extension, Head Start, and day care educators in the San Luis Valley. The workshops were well received by the participants. Mean knowledge score increased from 43.5% on the pre test to 70.5% on the post test. During the four workshops we saw the variety of professionals and paraprofessionals who work with women, infants and children from low income/migrant families in the San Luis Valley coalesce into a cohesive group all focussed on improving the nutritional status of low income infants and children. As a group they value the expertise of Cooperative Extension and are well prepared to support the use of Abuela educators in their respective communities. At the present time, training of the Abuelas in area 1 has been scheduled and the training workshop series for professionals and paraprofessionals in area 2 have been planned and advertised.

## EXECUTIVE SUMMARY

**State:** Florida

**Title of Project:** Addressing the Nutrition and Health Needs of Haitian Women Who are Pregnant, Breastfeeding and/or Mothers of Children Under Five

**Project Director's Name and Phone Number:** Linda D. Cook, Associate Professor, PO Box 110470, Gainesville, FL 32611-0470, (904)392-2090

**Target Population:** WIC-eligible Haitian women who are pregnant, breastfeeding and/or mothers of children under five

### **Objectives:**

#### **For Florida Cooperative Extension and WIC:**

1. To identify Haitian culture/traditions as they relate to food and nutrition practices during pregnancy, breastfeeding and childrearing.
2. To develop a nutrition education curriculum and select appropriate WIC food packages, within the federally authorized supplemental foods available, for Haitians based on their nutritional needs, a blending of cultures and availability of foods.
3. To develop culturally appropriate nutrition education teaching materials for Haitian women who are pregnant, and breastfeeding, and/or mothers of children under five.

#### **For Haitian women who are pregnant, breastfeeding and/or the mother of children under five:**

1. To practice good nutrition and lifestyle habits (i.e. avoidance of alcohol, cigarette smoking) during their pregnancy.
2. To deliver a baby whose birthweight is equal to or greater than 5 lbs. 8 oz. at birth.
3. To breastfeed their infants.
4. To feed their infants and children a nutritionally adequate diet.

### **Intervention:**

Field research was done with groups of Haitians and leaders/professionals in the Haitian community regarding cultural practices relative to their diets, with special emphasis on pregnant and lactating women and young children. These findings were used to develop a series of lessons to address the current Haitian practices and adoption of recommended dietary practices for pregnancy and feeding the young infant. A doctoral student in anthropology with experience in Haiti and a Haitian born senior in Nutritional Sciences at the University of Florida provided the acculturation for the whole project. Realizing that the visual presentation is very important because of the language barrier, short video tapes in Haitian were developed on each of the topics. The videos utilized Haitian actresses and familiar locations in the Haitian community to increase the acceptance of the clients. Topics addressed include the concern of adequate weight gain, making the right food choices, breastfeeding, and practicing good health habits. A lesson on introducing solid foods for the older infant has been developed but not without a video.

### **Results:**

The four videos are in the final stages of production with the adding of credits and Haitian music currently being done. Graphics and curriculum people are working on the teaching materials and the lessons plans. Determining the best way to approach the videos and the teaching materials has taken much longer than we ever dreamed. Dealing with a totally different culture and trying to use their language and customs while trying to convey recommended practices has been a challenge.



## **EXECUTIVE SUMMARY**

**STATE:** GEORGIA

**TITLE OF PROJECT:** TAMS Integrated Nutrition and Health Program

**PROJECT DIRECTOR:** JoAnn McCloud-Harrison  
Hoke Smith Annex  
University of Georgia Cooperative Extension Services  
Athens, Georgia 30602  
Phone: (706) 542-8866 FAX:(706)542-8845  
Internet: jmharris@uga.cc.uga.edu

**TARGET POPULATION:** WIC Pregnant and parenting teens in Dougherty County (Albany), Georgia. Phase I implementation targeted WIC pregnant teens 4-6 months pregnant. Phase II implementation which will begin in fall '94 will target all WIC pregnant teens and parenting teens.

### **OBJECTIVES:**

- (1) To improve maternal and infant health by:
  - a) improving diets and nutrition related behaviors of pregnant and parenting teens
  - b) increasing knowledge of healthy food and nutrition practices.
  - c) increasing maternal weight gain
  - d) reducing the percent of low birth weight infants born to teens.
- (2) To increase interagency cooperation between WIC, CES, and other health related agencies by coordinating nutrition and health education support for pregnant and parenting teens participating in WIC.

### **INTERVENTION:**

Five nutrition and health teen support groups were organized and conducted over two six-week sessions with WIC pregnant teens. Pregnant teens met two hours each week after school and during the summer at a local church and community facility. The small group sessions were conducted in a relaxed, informal setting which encourage participation of teen's "significant other" (boyfriend, close friend or family member). Each meeting included a nutrition and health topic discussion and activities, food preparation skill building, goal setting and concluding with a graduation class tour of the hospital's labor and delivery room. The focus of the sessions were on "birthing a Healthy Baby" by increasing knowledge of healthy food and nutrition practices; improving the diet through improved food consumption as recommended by the food guide pyramid and increasing maternal weight gain during pregnancy.

Pre and post assessments were conducted to look at changes in nutrition



knowledge, attitude and food related behaviors. The program delivery strategy was designed based on input from four teen focus groups. The classes were taught primarily by the project program assistant with support from the local WIC staff and other health related agencies as guest speakers.

## **RESULTS:**

WIC Project teens had improved pregnancy outcomes and met program objectives for desirable behavior changes. The project group babies' mean birthweight (7.4 lbs.) was significantly higher than the control group's mean birthweight (6.5 lbs.). The mean maternal weight gain (34 lbs.) of the WIC project teens was higher than the control group's maternal weight gain (27 lbs.), other TAMS counties maternal weight gain (30 lbs.) and the Dougherty County WIC program maternal weight gain (25 lbs.). 93% of the project teens met their weight gain goal and weight fell within the recommended weight gain range (25-35 lbs.) compared to 57% for control group and 79% for other TAMS counties. 92% of the project teens showed improvement in overall diet with teens consuming increased food servings for all food groups except dairy. There was a significant increase in teens trying new and different nutritious foods. Teens attitudes toward breastfeeding changed more toward the positive with 23% of teens initiating breastfeeding. Over 21 different agencies and community organizations contributed over \$30,000 of in-kind support for this project. 43 WIC teens were reached through this effort.

## EXECUTIVE SUMMARY

State: Guam

Title of Project: Early Experiences and Counseling for Effective Lactation (EXCEL)

Project Director's Name and Phone Number: Rebecca S. Pobocik, PhD, RD; (671) 734-2579

Target Population: Pacific Islander pregnant and parenting adolescents

Objectives: The objectives of this project are threefold: first, to initiate a workable alliance with the public health and education departments to provide education and support for pregnant/parenting adolescents; second, to improve the diet and health behaviors of these adolescents and third, to increase the incidence and duration of breastfeeding on Guam.

Intervention: There are three complementary components in the EXCEL program. One is to develop interagency collaboration by establishing protocols with the territorial WIC coordinator and department heads of Government of Guam agencies for program delivery and staff training. A second is to provide educational intervention to pregnant adolescents in support of improved diet and health behaviors and breastfeeding initiation. Curriculum materials and a video were developed as part of the educational intervention. A third component is to conduct individualized, intergenerational teaching for the adolescents and their family. All components of the EXCEL program were developed, tested, and revised during the program year. Knowledge and behavior data were compared for both intervention and control subjects.

Results: Effective community linkages have been established. Project staff provided sixty hours of inservice training for Extension and WIC paraprofessionals, developed a referral network which included all WIC clinics, established a territorial advisory group in support of Extension Service and WIC programming, and provided nutrition education in the public schools. The dietary intake of pregnant adolescents on Guam was characterized for the first time; this allows for more effective programming. There was significant improvement ( $P<0.05$ ) in knowledge of appropriate diet for adolescent females by the study participants ( $n=47$ ) in the specific areas of iron, calcium and food groups. Behavior change was indicated by the significant ( $P<0.05$ ) increase in both dietary iron, from 47% to 91% of the Recommended Daily Allowances and hematocrit values, from 34.5 to 37.6 percent. These improvements were meaningful. At baseline 40 % of the subjects in both

intervention and control groups had hematocrit values that were below normal (34%) while none of the intervention subjects and 30 % of the control subjects had postpartum hematocrit values below normal.

Breastfeeding data were collected on only 55% of the intervention group because many of the girls had not yet delivered their babies by the time this report was prepared. Of the adolescents who received EXCEL education, 73% initiated breastfeeding. This incidence of breastfeeding initiation was much higher than that of WIC clients of all ages which is estimated to be 12.5%. Sixty one percent of the girls in the control group initiated breastfeeding. Breastfeeding duration for most intervention subjects was four weeks. The most common reason for discontinuing breastfeeding was returning to school.

In summary, the EXCEL project is a nutrition education intervention designed to improve the diet and health status of pregnant adolescents and their babies. The participants were primarily Pacific Islanders. Significant improvement was observed in knowledge of appropriate diet, dietary iron intake, and hematocrit values. The incidence of breastfeeding was much higher than levels previously noted in the community. Program staff are very encouraged by the positive outcomes from a relatively short duration project dealing with pregnancy.



## II. EXECUTIVE SUMMARY

<b>State:</b>	Iowa
<b>Title of project:</b>	Building a Peer Network of Nutrition and Breastfeeding Support for Rural Iowans
<b>Project director's name and phone number:</b>	Elisabeth Schafer 515-294-6507
<b>Target population:</b>	WIC-eligible mothers, their infants, and their families in the rural areas surrounding Fort Dodge and Ottumwa, Iowa.

### Objectives:

The purpose of this project was to provide nutrition education and increase breastfeeding initiation and duration by providing new mothers with volunteer peer counselors. The specific objectives are shown in Table 1.

### Intervention:

Volunteer peer counselors were recruited and trained to provide home support for new mothers. Peer counselors met with pregnant women one to three times before delivery and a minimum of five times after birth. Visits before birth focused on breastfeeding. Mothers who chose to breastfeed continued in the project. Visits after birth focused on specific breastfeeding assistance and problem-solving as well as a brief nutrition lesson. The five lessons were: Grains; Vegetables; Fruits; Dairy Products; and Meats, Fish, Poultry, and Beans. At entry into and exit from the program, participants completed a 24-hour Food Recall and surveys of knowledge of nutrition and infant-feeding practices. Most peer counselor visits with mothers were one-on-one, but some were in small group settings.

### Results:

Table 1 shows the indicators and accomplishments of the project to date. The activities of the project met or exceeded goals. Outcomes for numbers reached and changes in knowledge and behavior do not yet reach goals but data has been slow in arriving for summary. There is a considerable germination time for a project such as this and we are just now beginning to reap the harvest. Of those few participants for whom we have complete data we see 100% of participants increasing in knowledge of healthy diet, benefits of breastfeeding and methods for managing breastfeeding. The method used to evaluate improved diets is not valid for the small sample we currently have. As the sample increases, the results will become valid. Therefore, although average of intake of breads and cereals, fruits, and meats improved, at this point no final conclusion should be drawn on improvement of dietary behavior. During the project the rate for breastfeeding increased considerably. In the Ottumwa area in July, 1994, 27% of WIC postpartum women were breastfeeding, compared to only 19% in August, 1993. In the Fort

Dodge area in July, 1994, 28% of WIC postpartum women were breastfeeding, compared to only 21% the previous year. Information on breastfeeding duration has not yet been collected since participants have not yet reported end points for breastfeeding.

We conclude that the volunteer peer counselor model for breastfeeding support for small town and rural women can be highly successful. We witnessed increased support in the community environment for breastfeeding. The project has been slow to gain momentum. One year is not adequate to demonstrate significant change in all indicators. As we continue to receive exit information from participants, we expect the results to become even more impressive.

**Table 1.**  
**Summary of Objectives and Accomplishments**

*Objective 1.* The Extension project will reach more of WIC's neediest clients by increasing interagency cooperation related to nutrition education.

Indicators	Goal	Actual
• training sessions held	4	7
• WIC sites involved	2	2
• participants served	175	116
• coalitions formed	2	2

*Objective 2.* Participants will acquire the knowledge and skills needed for nutritionally sound diets and healthy lifestyles; 90% of 175 participants will report or demonstrate increased knowledge and skills related to diet and lifestyle in two or more of the following areas:

Indicators	Goal	Actual
• increased dietary knowledge	157	3 of 3
• increased knowledge of breastfeeding benefits	157	2 of 2
• increased knowledge of breastfeeding techniques	157	2 of 2

*Objective 3.* Participants will demonstrate behaviors that contribute to nutritionally-sound diets and healthy lifestyles; 80% of 175 participants will report or demonstrate improved behavior related to diet and lifestyle in two or more of the following areas:

Indicators	Goal	Actual
• dietary intake	140	2 of 3
• breastfeeding initiation	140	89
• breastfeeding duration	140	no data

## II. EXECUTIVE SUMMARY

STATE: Maryland

TITLE OF PROJECT: Infant Feeding for Hispanic WIC Populations: A Peer Education Model

PROJECT DIRECTOR: Jean Ann Anliker, Ph.D., R.D.  
 Extension Home Economics  
 2309 Computer and Space Sciences Building  
 University of Maryland  
 College Park, MD 20742-2451  
 Phone: (301) 405-1006

### TARGET POPULATION:

First-time Hispanic mothers of infants enrolled in the Prince George's and Montgomery county WIC programs. (We chose first-time mothers for this study to avoid the contamination of previous infant feeding education, but the program is relevant to other Hispanic women with children, as well.) We will recruit women and begin testing our interventions when they are in the last trimester of their pregnancies; interventions will continue until their babies are nine months of age. There will be two cohorts, three months apart, each with a treatment and control group. We expect to recruit 100 treatment and 100 control subjects for each cohort.

### RATIONALE AND OBJECTIVES:

Research has highlighted a need for providing culturally-appropriate education and support to new Hispanic mothers concerning the feeding of their newborns. This has been reinforced by Healthy People 2000, which includes specific health objectives for Hispanic children under the age of one year. The need for ongoing breastfeeding support has been documented, and factors associated with the cessation of breastfeeding have been identified. Studies have also shown that Hispanics often introduce solid foods early, provide cow's milk before 6 months of age, give their babies sweetened beverages, put their babies to bed with a bottle, and/or use bottles to feed infant cereal. Early feeding practices may contribute to the patterns of overweight and baby bottle tooth decay commonly seen among Hispanic children. However, WIC infants in Maryland are generally not seen between one month and one year of age. To address these issues, we formed a bicultural project committee composed of State and local Extension faculty, State and local WIC staff, and faculty from the Department of Health Education at the University of Maryland, and set the following objectives:

1. To assess the behaviors, beliefs and values of Central and South American women living in the U.S. concerning infant nutrition and health care.
2. Based on the results of these assessments, to develop, implement and evaluate a peer education program for teaching infant feeding practices to new Hispanic mothers. This will include an Hispanic peer counselor's training and operations manual that can be used by other states for similar programs.
3. To develop, and test through focus groups, culturally appropriate educational materials about infant feeding for Hispanic mothers, including a one-year baby feeding calendar. These will be developed in Spanish, rather than being translated from English, and will focus on the behaviors, beliefs and values identified in Objective #1.

### RESULTS:

To achieve these objectives, our committee has developed a peer education program, "Un Bebe Saludable: Un Regalo Muy Especial" ("A Healthy Baby: A Very Special Gift"), for first-time Hispanic mothers enrolled in WIC. The program will be pilot tested in Prince George's and Montgomery counties, where the Hispanic populations, largely from Central and South America, are growing rapidly. In the past year, devoted to program development, we have accomplished the following:



1. We developed a Spanish questionnaire and conducted interviews with 52 Hispanic mothers to study the knowledge, beliefs and practices of Central and South American Hispanic women living in the U.S. with regard to infant feeding and care. The results of this survey, together with current research on Hispanic infants, form the basis of the key behavioral messages and program curriculum. The key messages, carried through the calendar, behavior-reinforcing stickers, and other educational materials, are: 1) prolong breastfeeding; 2) respond to the baby's signals of hunger and fullness; 3) use only breast milk, formula, or plain water in your baby's bottle; 4) avoid the use of sweeteners in the baby's bottle or on pacifiers; 5) avoid propping bottles; 6) introduce solid foods when the baby is four to six months of age; 7) avoid adding sweeteners, fats, or salt to baby foods; 8) feed breast milk or formula, rather than cow's milk, until 12 months of age; 9) use sanitary practices when preparing or handling bottles and foods; and 10) get immunizations on time.
2. We developed the infant feeding peer education program and, using the back-translation technique, culturally-appropriate materials in Spanish and English. The materials include a one-year baby feeding calendar with stickers to reinforce appropriate behaviors, and tip sheets and other educational materials for the first 6 months. (Supportive materials for months 7-12 are being developed in the project's second year.) The calendar and tip sheets include original artwork contributed by the former director of Disney, Mexico. The format for our program is based on the EFNEP model. Home visits will be made prenatally and when the babies are newborn, one, and two months of age; monthly small group sessions will be held from three through nine months.
3. The educational materials were peer reviewed by three WIC and Hispanic nutritionists, and pretested with low-income Hispanic mothers recruited from prenatal clinics. Formative assessments included interviews with 13 women to evaluate the tip sheets, and with 37 women to validate the calendar illustrations and messages. The materials are now in publication. We have also ordered some additional materials for the new Hispanic mothers, and background/teaching materials for the peer educators.
4. We prepared a Peer Educator's Manual which includes background information about the project; lessons on how audiences learn, communication techniques, conducting home visits and group sessions; reference materials and guidelines for each session with the mothers; and activities to help the peers learn more effectively and practice their sessions.
5. Program evaluation instruments have been drafted and will undergo cognitive testing before use with the subjects. The instruments will be administered to both the treatment and control groups at the first visit (prenatally) and at three-month intervals. Questions assess self-efficacy, subjective norms, behavioral intentions and barriers, and knowledge, attitudes, and behaviors of the Hispanic mothers with regard to the key infant feeding behaviors. We will also use the Breastfeeding Support Record developed for the ES/WIC Initiative. When the babies are 9 months old, we will measure their weights and lengths using portable scales, and take a dietary recall of the infants.
6. We recruited peer educators through WIC, pregnancy clinics, EFNEP and the Hispanic Alliance, conducted interviews and made our selections. The peer educators will receive training from the staff both EFNEP and WIC before the interventions begin and again every three months. Peers are bilingual Hispanic mothers who have either been on WIC or are familiar with the WIC program.
7. This project was presented at the Society for Nutrition Education Annual Meeting in Portland, Oregon, July, 1994, and will be presented at the American Public Health Association Annual Meeting, Washington, D.C., November, 1994.

Having carefully developed and pretested our program components, we are now ready to train our peer counselors and begin the interventions.

## **EXECUTIVE SUMMARY**

### **Michigan State University Extension / Michigan WIC Breastfeeding Initiative**

**Year One (June 1, 1993 - May 31, 1994)**

**Project Co-Directors:** Barbara Mutch and Margaret McConnell  
**Project Lactation Consultant:** Karen Koss  
**Project Manager and Contact:** Charlotte McKay Phone: 517-353-9102

**Target Population:** Pregnant and Breastfeeding WIC Participants

#### **Objectives:**

- o to increase the incidence and duration of breastfeeding among WIC participants
- o to improve the nutritional status of pregnant and breastfeeding WIC participants
- o to increase collaboration between MSU Extension and the Michigan WIC Program

#### **Intervention:**

In six Michigan counties with the lowest breastfeeding rates, local and state WIC and Extension collaborated to promote and support breastfeeding among low-income women enrolled in the WIC Program. WIC Coordinators and Extension Home Economists hired paraprofessionals who had had positive breastfeeding experiences and were from the same socioeconomic group as WIC clientele to serve as peer counselors. The county ES/WIC teams were trained by the State WIC Lactation Consultant.

Local WIC agencies identified and referred to the peer counselor women who were considering or were currently breastfeeding. The peer counselors visited clients in the hospital, in WIC clinics, in their homes and through phone calls. Emphasis was placed on the initial two weeks postpartum when breastfeeding problems as most likely to arise. Peer counselors wore pagers to assure accessibility and quick response to mothers' needs and made immediate referral to community breastfeeding resources when high-risk situations developed. Three of the six counties provided tangible incentives or gifts to mothers who continued breastfeeding. Clients interested in EFNEP were instructed in the ERIB curriculum by the peer counselor or were referred to another EFNEP nutrition instructor.

In Michigan the Breastfeeding Initiative has linked the two agencies' strengths: WIC's resource of health professionals and access to large numbers of low-income pregnant and breastfeeding women with EFNEP's model of paraprofessionals working one-on-one with women in their own homes.

The project has the potential of three years of funding and the ultimate goal is to build the infrastructure in Michigan to fund and support breastfeeding peer counselor programs

throughout the state.

**Results:**

Four hundred seventy-four (474) women were enrolled in the project during the nine months (December 6, 1993 - August 31, 1994) in which peer counseling was available under Year One funding. Data reported represents the 199 women who exited the project by either dropping out, failing to initiate breastfeeding or discontinuing breastfeeding as of August 31, 1994. Of these women 59% were white, 33% were African American, 6% Hispanic, 1% Native American and 1% Asian American. Thirty-two percent (32%) were enrolled prenatally. The other 68% were enrolled after breastfeeding had been initiated.

Of women enrolled prenatally in the project 83% initiated breastfeeding, compared to 32% of women initiating breastfeeding in six control counties. The average duration of breastfeeding was 9.3 weeks. Forty-three percent (43%) were still breastfeeding at 2 months, compared with 18% of Michigan women enrolled in WIC and 17% of low-income women nation-wide. The most common reasons given for stopping breastfeeding were: (1) breastfed as long as intended, (2) didn't have enough milk, (3) returning to work or school, and (4) seemed too demanding.

In all six counties the local support network for breastfeeding was strengthened, as health departments, local lactation consultants, hospitals and La Leche League worked in coordination to support this project. Much of the success of this project can be attributed to the strong partnership formed between WIC and Extension, at both the state and local level.



## **I. EXECUTIVE SUMMARY**

**State:** Minnesota

**Title:** Nutrition. . . Making Life Healthy

**Project Director (PD) Name:** Sharon O'Gorman  
**PD Phone Number** (218) 847-3141  
**PD Fax Number:** (218) 847-2866

### **Target Population:**

1. WIC participants of Becker, Norman, and Mahnomen including the White Earth Indian Reservation – 69% live at or below poverty level
2. Pregnant and parenting adolescents – Teen births at 14.7%, Out of Wedlock births at 32.8%
3. Women from single parent households – 14.2% of all households
4. Four-year-old children

### **Objectives:**

1. Becker, Mahnomen and Norman Extension Programs will Increase Interagency cooperation related to nutrition education in order to reach the target
2. Participating individuals will acquire the knowledge and skills that contribute to nutritionally sound diets and a healthy lifestyle.
3. Participating individuals will acquire behaviors that contribute to nutritionally sound diets and a healthy lifestyle.

### **Intervention:**

1. Nutrition Education Advisory Council Established:
  - Recommended, reviewed and edited content of video education sessions.
  - Recommended and reviewed pre- and post-test questions.
  - Four members were trained to conduct and evaluate focus group interviews.
2. Development and Implementation of a Nutrition Education Curriculum – "Nutrition...Making Life Healthy"
  - Five locally produced video tapes:
    - Food Guide Pyramid – Shopping
    - Food Safety – The Use of Commodity Foods
    - Commodity Food Preparation
  - Tapes produced and developed by State and County MN Extension Service Professionals

with input from local WIC staff, Nutrition Education Advisory Council and Native American representatives from White Earth Indian Reservation.

- Six sessions offered over 8 months.
  - 5 video lessons and a 6th "hands-on" food preparation lab.
  - 613 participants over the 8 months.
- "Kids in the Kitchen" was offered to four-year-olds.
  - education on nutrition, food preparation skills & food safety principles.
  - Parents, HeadStart Staff and Nutrition Education Assistant facilitated this class.

#### Results:

1. 613 participated in "Nutrition...Making Life Healthy" classes, 135 participated in "Kids in the Kitchen".
2. Pre- and post-test survey results indicate significant positive effects on WIC participants' meal planning, food shopping practices, food safety practices and family meal management.
  - Participants reported that they frequently compared food prices 45% of the time prior to the program but did so 72% of the time after.
  - When deciding what foods to feed their families, 36% of participants responded that they "most of the time" or "almost always" think about healthy food choices in the pre-test and 86% after the intervention.
3. Focus group activities appear to validate pre- and post-test results.
  - Interventions had a positive impact on participants' nutrition awareness and how to make good food choices.
  - Food Guide Pyramid proved to be an effective nutrition education tool.
  - Focus group members indicated improved food shopping skills, food safety practices and meal preparation skills, i.e.: better hand washing practices; use of bleach water to clean counters/cutting boards; not thawing meat at room temperature; not leaving perishables out at room temperature for more than 2 hours.

## Nevada

Title: Meeting the Nutrition Education Needs of Hispanics in Nevada

Project Directors: Jamie Benedict, Ph.D., R.D.  
1-702-784-6445

Joyce M. Woodson. M.S., R.D.  
1-702-731-3130

**Target Population:** This project is designed to serve Nevada's fast growing ethnic population. The number of Hispanics has increased 131 percent between 1980 and 1990. Although several sub-groups of Hispanics have benefited from the project, the sub-group emphasized is Mexican. Of the 28,000 immigrants to settle in Nevada over the last ten years, 60% were Mexican. In 1990, eighty-five thousand of the 124,000 Hispanics in Nevada were Mexican.

This project is located in the City of Las Vegas. Las Vegas is in Clark County, home to two-thirds of the state's population. Hispanics make up 11.2 percent of the Las Vegas population. The expanded Special Supplemental Food Program for Women, Infants, and Children (WIC) anticipates that 40-50 percent of its 21,000 to 23,000 participants will be Hispanics. The project's goal is to enhance the nutritional well-being of WIC's neediest Hispanic clients, defined as those in high-nutritional risk. Priority is given to non-English speaking clients.

### Objectives:

1. Increase inter-agency cooperation related to nutrition education by: a) Joint staff development trainings with WIC and Extension, b) Annual trainings on other USDA nutrition programs, c) Referrals from three WIC clinics to Extension for this specific program, and d) consultation with the EFNEP Resource Committee.
2. Provide educational programs which will assist participants in acquiring the knowledge and skills that contribute to a sound diet and healthy lifestyle by: a) Increasing participants' knowledge of prenatal, lactating, infant, or preschool diet, and of parenting practices that contribute to a healthy child and; b) Enhancing participants' ability to plan and prepare nutritionally-balanced meals/menus (including selecting and buying food), handle food safely, and manage food budgets and related resources from food assistance programs such as Food Stamps and WIC.
3. Help participants acquire behaviors (e.g., food intake, safe food handling, breastfeeding, etc.) that contribute to sound diets and a healthy lifestyle through education, demonstrations, and other learning activities.

**Intervention:**

The California Cooperative Extension's EFNEP curricula was adopted as the foundation for this program. This curricula was supplemented with four lessons from the "Eating Right is Basic" EFNEP curricula, and one lesson from Childbirth Graphics®. Participants were enrolled for approximately five months and received most lessons individually and/or in small groups (2-3). Teaching contacts were four times a month. Bilingual, Spanish-speaking Program Assistants conducted the nutrition lessons in the participant's home. Special effort was made to work with pregnant/postpartum women to promote appropriate infant nutrition. Interactive participatory activities included supermarket tours and food preparation activities. One-hundred-and-nine WIC clients were enrolled in year 1.



## Results:

Objective 1. Year One of this ES/WIC Initiative Project resulted in increased inter-agency cooperation among Nevada Cooperative Extension, the Special Supplemental Food Program for Women, Infants and Children and other child nutrition programs. High nutritional risk WIC participants are referred to this program weekly from three different clinics; 109 WIC clients were enrolled in the project this year; leaders in the community have agreed to serve as advisors for the program; and joint staff trainings between WIC and Extension have been scheduled.

Objective 2. Graduates of this ES/WIC project (n=50) have demonstrated an increase in the knowledge and skill that contribute to a sound diet and a healthy lifestyle. Based on the EFNEP Behavior Checklist, 84% percent (n=42) showed improvement in two or more food resource management practices; 88% (n=44) showed improvement in two or more nutrition practices; and 72% (n=36) showed improvement in food safety practices.

Objective 3. Graduates of this ES/WIC project (n=50) have acquired behaviors that contribute to nutritionally sound diets and a healthy lifestyle. Dietary analysis (based on 24-hour food recall) indicated that 94% of the participants made improvement with regard to number of servings eaten from each food group. The most notable improvement was in vegetable consumption which increased from a mean of 3.3 servings to 3.7 servings - increasing both Vitamin C and dietary fiber intake. In addition, 54% of the participants showed improvement in meal planning, 70% showed improvement in food safety practices, and 56% were less likely to run out of money for food before the end of the month.

In addition, program participants were asked to complete a short, open-ended questionnaire related to perceived program benefits, aspects of the program they like the most/least, and suggestions for improvement. Learning more about nutrition and healthful meal planning/preparation methods and saving money were important program benefits. One out of every four participants said that the lesson on shopping basics was their favorite lesson. The most frequent suggestion for improving the program was to expand it with additional lessons.

In summary, Year One of this ES/WIC Project, "Meeting the Needs of Hispanics in Nevada", has achieved its objectives related to enhancing the nutritional well-being of WIC's neediest Hispanic clients.

## EXECUTIVE SUMMARY

**State:** New York

**Title of Project:** Building Blocks for Toddlers

**Project Directors:** Muriel S. Brink      Soneeta Grogan-Enanoria  
607-255-7715      607-255-2246

**Target Population:** Neediest first-time parents of toddlers are the focus of Building Blocks for Toddlers (BBT), a nutrition education program that incorporates resource management and parenting. Many first-time parents have limited understanding of the importance of food to the growth and development of their toddlers and do not recognize their parental role in modeling eating practices. Toddlerhood is a transition period in which parent-child relationships change; food is often used by toddlers to demonstrate this changing relationship.

BBT is being implemented collaboratively by state and local Cornell Cooperative Extension and New York State Department of Health (NYSDOH) and local WIC staffs in Broome and Tioga Counties, contiguous upstate counties, and in Queens, NYC. These locations represent the diversity within New York State in terms of rural, mid-size and urban communities and in terms of ethnicity.

**Objectives:** The three objectives are:

1. Building Blocks for Toddlers will increase the interagency cooperation related to nutrition education in order to reach 150 of the neediest, first-time parents of toddler WIC clients.
2. Ninety percent of the 150 neediest, first-time parents of toddler WIC clients will acquire knowledge of nutrition that contributes to nutritionally sound diets and knowledge of parenting practices that contributes to the development of a healthy parent-child relationship.
3. Eighty percent of the 150 neediest first-time parents of toddler WIC clients will acquire behaviors that contribute to nutritionally sound diets and healthy lifestyles for themselves and their families with special attention given to the diets offered to toddlers.

**Intervention:** The plan of recruiting, enrolling, teaching and graduating participants in cycles works in Broome County. It was not efficient in either Tioga County or Queens, NYC. The pace of referrals, participants' schedules and transportation influenced the successful use of cycles.

The holistic education model which features active involvement of participants in programmatic decisions is used in the implementation of BBT. The Diagnostic Report, participants' interests and needs observed by community educators are used to plan the sequential lessons pertaining to food, nutrition, resource management and/or parenting. The initial plan was to use complementary teaching strategies: group learning and individualized instruction. During February, 1994, the state advisory committee decided that individualized, in-home instruction



with periodic group sessions would be the primary method. Difficulties encountered were: lack of or cost of transportation, participants' schedules, staff time required to form and maintain groups, holidays and weather. Individual lessons last about one-and-a-half hours; group sessions are between two and two-and-a-half hours long.

**Results:** Staff from the three WIC clinics referred 175 clients to BBT; 131 met the criteria of being first-time parents of toddler WIC clients and resided in the target areas, 83 enrolled in BBT. Reasons for not enrolling included parents' schedules, lack of interest and inability to contact. In nine months 22 of the parents graduated, 42 were continuing in BBT and 19 withdrew.

All of those who graduates met or exceeded the goal of increased nutrition knowledge. Self-reported data from 31 participants indicate that they increased their parenting knowledge and adjusted their interactions with their toddlers.

All of the 22 BBT graduates reported improved or sustained desired practices in the areas of food budgeting and buying; food preparation; and food storage, safety and sanitation which met the 80 percent criteria.

In terms of self-reported eating practices, those who graduated with 18 lessons reported eating foods that met or exceeded the goal of 80 percent of the recommended values for calories, protein, calcium, iron, vitamin A and vitamin C.

The distribution of calories among energy sources did not meet the recommended distribution. Participants graduating with >19 lesson met the criteria for protein, calcium, vitamin and vitamin C but not calories and iron. Participants graduating with 12 lessons met the criteria of 80 percent for protein, vitamin A and vitamin C but not for calories, calcium and iron. However, the distributions of calories among energy sources did meet the recommended distribution for both of these sub-groups.

The variables used to assess the diet quality of foods offered to toddlers are frequency, variety between food groups and quantity. Eleven of the 22 graduates completed the initial and exit assessments of foods offered to their toddlers. At exit, nine reported offering food at least 5 times daily, an increase of 1. In terms of meeting the criteria for recommended number of offering per food group, at exit all met the criterion for the Milk, Yogurt, and Cheese Group, nine met the criteria for the Meat, Poultry, Fish, etc. Group and the Fruit Group, one met the criterion for the Vegetable Group and none met the criterion for the Breads, Cereal, Rice and Pasta Group. The number of offerings from the Fats, Oils, and Sugars Group decreased and did the number of foods initially offered in excessive amounts.

Results indicate that first-time parents of toddler WIC clients did gain knowledge in the areas of nutrition and parenting and adopted or sustained desired food-related practices. Improvements were made in the parents' personal eating practices and in the frequency, variety and quantity of offered to toddlers. Additional learning opportunities are needed by some of the parents are to met the criteria set for adult eating practices and the foods that parents offer their toddlers. Overall, parents and their toddlers benefit from BBT.



## II. EXECUTIVE SUMMARY

State: North Carolina

Title of Project: North Carolina Special Programs Expansion:  
Breast-feeding Support Project.

Project Director: Dr. Ngaire M. van Eck. (919) 515-2782

Target Population: Breast-feeding WIC clients.

### Objectives:

Of 270 WIC breast-feeding clients in two counties, 243 (90%) to increase knowledge of lactation diet and skills related to breast-feeding, 230 (85%) to improve diets of breast-feeding mothers, 215 (80%) to have breast-fed for at least 2 weeks and 135 (50%) to have breast-fed for 8 weeks or long

### Intervention:

This project was designed to test replication of a pilot program in two new sites - urban Cumberland County and rural Pasquotank County. The pilot program in Wake County had proven effective in increasing the numbers of WIC clients who established lactation and had maintained breast-feeding beyond 2 months postpartum. Average duration of breast-feeding among the experimental group was 14.2 weeks, compared with 5.5 weeks among controls ( $p < 0.01$ ); breast-feeding at 8 weeks was 59%, compared with 14% in control group. The intervention consisted of community-based support for breast-feeding WIC clients by an EFNEP paraprofessional. Subjects were contacted in hospital after delivery and followed up in the home within 2-3 days of hospital discharge. During home visits, the paraprofessional assessed progress with breast-feeding, explained supply and demand in lactation, checked on baby's physical condition, corrected poor techniques, alleviated mothers' anxiety about breast-feeding ability, checked adequacy of maternal diet (including fluid intake) and offered help in planning simple family meals. Additional visits were made as necessary or at client request. A WIC lactation consultant provided professional back-up expertise. Most frequent contacts were needed during the first two weeks postpartum and with mothers who were breastfeeding for the first time. Many mothers needed additional help when pumping milk for infants in hospital, when baby showed signs of illness or refusal to nurse, when mother was returning to work or when starting the weaning process. Teaching contacts averaged 3-4 per client; range 1-9. Communications proved vitally important for quick response to client calls for help. Breast-feeding mothers were referred to other staff for enrollment in EFNEP. CES and WIC staff collaborated in all phases of project planning, training and implementation. Linkages were formed with local health and community groups in each county.

### Results:

After 9 months in Cumberland and 7 months in Pasquotank Counties, the project had reached almost twice the number anticipated for 12 months. Project objectives were exceeded for total numbers enrolled and for numbers and percent who increased knowledge of breastfeeding skills. Numbers who increased knowledge of lactation diet exceeded the objective, but percent was lower. In both counties, project objectives were exceeded for numbers and percent of mothers breast-feeding at 2 weeks and 8 weeks postpartum. These outcomes were similar to breast-feeding duration results in Wake County.

These findings suggested that the pilot program could be replicated in other settings with similar results. One additional N.C. county had secured local funds to initiate a similar breast-feeding program, and others were being planned. There was potential for continued CES/WIC cooperation and cost-sharing to provide effective breast-feeding support for WIC clients.

## II. EXECUTIVE SUMMARY

State: North Carolina  
Title of Project: Pregnant And Adolescents Program Expansion  
Project Director: Ngaire Van Eck, NC EFNEP Coordinator  
919-515-2782

Target Population: Pregnant teens in Edgecombe and Lenoir County

- Objectives:
1. To increase enrollment of EFNEP pregnant teens to 100% in WIC.
  2. 90% of participating pregnant teens achieve satisfactory outcomes of their pregnancy.
  3. 90% of participants attain knowledge and skills to support expected growth patterns of infants.
  4. Develop and test newly developed nutrition curriculum.

Intervention: The delivery of a new, "hands on", experiential based curriculum targeting pregnant teens and their nutritional needs was piloted in schools and one-on-one teaching. The curriculum translated knowledge into actual and real experiences. Focusing on teen's specific nutrient needs during pregnancy, food groups from the Pyramid, snacking and planning for infant feeding, the eighteen lesson curriculum was designed for group delivery. The group design and "hands on" method were used to build support among the teens and provide reinforcement for skill development and knowledge gained.

With the collaboration of public agencies and private organizations, recruitment was done through the middle and high schools. Cooperation from the county's WIC, Health Department, Social Services Department was instrumental in the program's success. enhanced the teaching experiences with resource personnel.

Results: Paraprofessionals recruited 107 youth participants. Of those, 60 were pregnant teens. Their ages ranged from 12 to 19 and 87% were black teenagers. The average number of lessons that participants received was 10. Eighty-six percent (86%) of the pregnant teens demonstrated an increase in their knowledge of prenatal diet while there were only marginal changes in their food consumption patterns. Subgroup scores on pre/post knowledge survey, relative to securing and preparing foods, indicated 80% increased their understanding. This may be a reflection of attitude and practices rather than knowledge. Most participants were not living independently or in total control of food choices.

Birth weights were used to measure satisfactory pregnancy outcomes. Of the thirty-eight babies delivered thirty-three or 88% weighed 5 1/2 lbs. or more. The average birth weight was 7 lbs. Three of the five below desired minimum weighed 5 lbs. and 6 ounces. A fourth baby, one of a set of twins weighed 4 lbs and 15 ounces, while the other twin weighed more than 7 lbs. The fifth LBW baby weighed 4 lbs. and 15 1/2 ounces. There were no very low birth weights.

Small groups with this "hands on" experiential curriculum, designed for teens, reinforced nutrition concepts and provided practical experience. The support generated by the groups has served as a positive influence and esteem builder. This was demonstrated by the return to school of one teen who had declared she would not.



State: Oklahoma

Project Title: ES/WIC Nutrition Education Initiative; 93-ENED-1-7513.

Project Director: Glenna Williams (405) 744-6283

Target Population: Pregnant Teens Enrolled in the Chickasaw Nation WIC Program.

**Objectives:**

- (1) Extension programs will increase interagency cooperation related to nutrition education in order to reach an increased number of the "neediest" WIC population.
- (2) Participating individuals will acquire the knowledge and skills that contribute to nutritionally sound diets and a healthy lifestyle.
- (3) Participating individuals will acquire behaviors that contribute to nutritionally sound diets and a healthy lifestyle.
- (4) Participating individuals will have improved nutritional status and birth outcome.

**Intervention:** The purpose was to implement and evaluate an 8 week intensive nutrition education for the pregnant teens enrolled in the Chickasaw Nation WIC program. The nutrition education program was taught by teaching paraprofessionals using two curricula which were evaluated based on nutritional status of pregnant adolescents and birth outcome. One was the general adult nutrition education curriculum, "Eating Right is Basic" ("ERIB"); and the second was a nutrition education curriculum designed for pregnant teens, "Have a Healthy Baby". The educational intervention for both curriculum consisted of 9 sessions in a one-to-one setting. The first session was an introductory meeting and the following 8 were teaching/learning sessions. A follow-up visit was made after the teen delivered. The educational sessions were held in a variety of settings depending on what worked best for the teen. Some teens received the lessons in their homes while others received the lessons at school, the WIC clinic, or the Extension Service county office.

The rationale for implementing and evaluating the effectiveness of two 8-week intensive nutrition education programs were:

- (1) If 8 weeks of an intensive nutrition education program for pregnant teens enrolled in the Chickasaw WIC Program indicates a significant difference with maternal nutritional status and birth outcome; then implementation of short intensive nutrition education programs can be justified.
- (2) If the use of a tailored curriculum for pregnant teens indicates a significant difference in nutritional status and birth outcome as opposed to general adult curriculum; then the

allocation of additional resources for curriculum development and adaptation to meet the needs of specialized audiences can be justified.

**Results:** Overall, both programs resulted in an increase in attitude and knowledge scores. Eighty-nine percent of the participants in both programs increased attitude scores and 86 percent of participants in both programs increased knowledge scores. However, a greater percent of participants in the "Have A Healthy Baby" program had improvements in attitude and knowledge scores than the "ERIB" program. In addition, the increases in attitude and knowledge scores were significant ( $p < 0.05$ ) for participants in the "Have a Healthy Baby" but not for participants in "ERIB".

Based on food frequency and 24-hour recall data, both programs had participants who increased the number of food servings from the bread/cereal, fruit, vegetable, meat and dairy groups and had improved dietary intakes. Overall, a greater percent of participants in the "Have A Healthy Baby" had dietary improvements based on 24-hour recall evaluation. Final maternal weight gain to date is available on 17 participants. Overall, 65 percent of all participants had a weight gain between 20 to 35 pounds, 64 percent in the "Have A Healthy Baby" program and 50 percent in the "ERIB" Program. Overall, a greater percent of participants in the "Have A Healthy Baby" program had an acceptable weight gain.

Both programs had participants with improved maternal blood indicators in blood pressure, glucose, hematocrit and hemoglobin, indicating improved nutritional status. Eighty-four percent of all infants born to mothers participating in these programs had birth weights greater than 5 and 1/2 pounds. Seventy-five percent of infants born to mothers participating in "ERIB" and 91 percent of infants born to mothers participating in "Have a Healthy Baby". We anticipate that the percent of live births greater than 5 1/2 lb. will increase as more participants deliver. To date there have only been 19 births to mothers participating in the program.

In conclusion, the use of a tailored curriculum for the purpose of improving dietary habits is effective. The allocation of resources to develop curriculum tailored for specific groups of people is worthwhile. Eight weeks of intensive nutrition education intervention has resulted in an increase in knowledge and attitude; improved dietary intakes; and improved maternal indicators.

## Executive Summary

State: Rhode Island

Title of Project: WIC/EFNEP Southeast Asian Nutrition Education Initiative

Project Director's Name and Phone Number: Linda M. Sebelia, 401-277-3984

Target Population: Cambodian WIC recipients residing in Providence, RI

Objectives: To increase the number of breastfed infants and the duration of that feeding; and to teach Southeast Asian mothers how to improve and adopt the necessary dietary changes to improve the health and well-being of their children. Specific objectives include:

- To increase interagency cooperation between Cooperative Extension/EFNEP and WIC in regard to nutrition education.
- To promote and support breast feeding and sound infant feeding practices to 50 Cambodian WIC women enrolled in EFNEP.
- To increase participants knowledge and skills that contribute to nutritionally sound diets and a healthy lifestyle.
- To adapt behaviors that contribute to nutritionally sound diets and a healthy lifestyle.
- To produce a thirty minute video in Cambodian which promotes breast feeding and portrays nutrition issues which impact the lives of Cambodian women and their children.

Intervention: The nutrition intervention includes a two-part strategy - a breast-feeding promotion and support program in conjunction with traditional EFNEP and a video production entitled "Sophia's Choice" which breaches cultural barriers associated with breast-feeding and infant feeding practices. Both approaches were based upon information gained through focus groups. The development and implementation of the teaching curriculum as well as the script resulted from a coalition of WIC, EFNEP and other health related professionals. Two, bi-lingual, bi-cultural peer counselors (EFNEP paraprofessionals) were hired and trained in all issues relevant to the counseling and management of the breast-feeding mother and infant. A continuing enrollment of Cambodian WIC recipients was accomplished through referrals by the WIC nutritionist and/or the Outreach Coordinator. Depending on the stage of pregnancy in relation to the date of EFNEP enrollment, clients received varying degrees of the nutrition education/breast-feeding promotion. (All clients were visited a minimum of three times prior to delivery.) Clients were contacted and/or visited as close to delivery as possible; paraprofessionals provided breast-feeding support based upon specific needs of the new mother. Nutrition intervention continued for a period of up to 4 months. The nutrition video, "Sophia's Choice", was produced in soap-opera format and performed in Cambodian by members of the Providence Cambodian community. Based on the Southeast Asian traditional method of storytelling, this video depicts a young pregnant woman's decision to breastfeed. Interspersed at regular intervals are eight 30 second "commercials" which present and reinforce relevant breast-feeding and nutrition information. Distribution of



"Sophia's Choice" is through WIC clinics, social service agencies, community centers and schools, video stores and libraries. In addition, two community based outreach programs serving the Cambodian community, incorporated our basic nutrition education messages into their interventions.

Results: During the nine month intervention period, forty-seven Cambodian WIC recipients were referred to EFNEP. Eight dropped out after the first or second visit, and 10 were in preliminary stages of intervention at grant period ending date. Thirty (30) women received intensive nutrition education/breast-feeding promotion and support; 27 met the educational objectives; of those, forty (40) percent breastfed their infants. The range of breast feeding duration was two weeks to four months. Reasons given for discontinuing breast feeding were breast infection or other illnesses (42%), returning to school or work (16%), mother didn't like doing it (16%) and mother breastfed as long as she intended (16%). Eight-four (84) percent reported a positive change in eating habits; 57% or more of all participants acquired knowledge and skill, while 50% or more reported behavior changes that lead to nutritionally sound diets and a healthy lifestyle (results based on EFNEP Evaluation and Reporting System.). A culturally sensitive, low-literacy instrument is being designed to evaluate knowledge gain and behavior change for WIC clients viewing the video as compared to those WIC clients not viewing the video.

## II. Executive Summary

State: South Carolina

Title of Project: Nutrition Education For Women (NEW)

Project Director's Name and Phone Number:

Katherine L. Sharman, Ph.D., R.D and

Brenda J. Thames, Ed.D., C.H.E.

803-656-5722

803-656-5723 (fax)

Target Population: Pregnant/parenting and breastfeeding adolescents and adults

### Objectives:

- 1) Extension programs will increase interagency cooperation related to nutrition education in order to reach an increased number of the "neediest" WIC population.
- 2) Participating individuals will acquire the knowledge and skills that contribute to nutritionally sound diets and a healthy lifestyle.
- 3) Participating individuals will acquire behaviors that contribute to nutritionally sound diets and a healthy lifestyle.

### Intervention:

The South Carolina CES/WIC project, Nutrition Education for Women (NEW) collaborates with the Healthy Start Project and the Governor's Office, Caring for Tomorrow's Children Program to provide intensive nutrition education to the neediest WIC participants in four South Carolina counties. NEW is administered by the SC Cooperative Extension System (CES), a partnership between Clemson University (1862) and SC State University (1890). CES has demonstrated the capacity to work collaboratively and effectively in strengthening communities. This project provides the opportunity for community-based nutrition related programs to link for the well-being of individuals and families.

The four counties were selected from the Pee Dee region of South Carolina, the poorest in the state. The target counties currently receive health services provided by WIC, Healthy Start and Caring for Tomorrow's Children. The CES/WIC nutrition education initiative is being delivered by an existing mechanism provided by Healthy Start. This program provides health services via the Rural Outreach, Advocacy, and Direct Services (ROADS) team. This mobile team consists of a clinical social worker, certified nurse practitioner, health educator, addiction specialist, resource mother, and early intervention specialist. CES/WIC provides a nutrition educator to that team in four of the six Healthy Start project counties.

CES/WIC utilizes and augments services provided by the Governor's Office, Caring for Tomorrow's Children program. This includes cross-referral of clients, distribution of the Coupon Book, education to families on how to utilize the book, and access to existing media support.

#### Results:

Nutrition Education for Women (NEW) made a positive impact with the target audience (pregnant/parenting) teens and young adults in four counties in the Pee Dee region of South Carolina. NEW was effective during the first year in establishing strong and effective collaborations among many state agencies. CES (1862 and 1890) has and will continue to benefit from linkages developed through NEW. Therefore, the recruitment, referral and outreach efforts identified in this project were achieved through a comprehensive programming approach that focuses on improving the health status of the target population.

Statistical analysis of the experimental and control group indicated that the groups were very similar based on demographic information and other measures such as income, family size, use of food stamps etc. Therefore, the differences in the knowledge gain and behavior changes may be contributed to the NEW project.

Of the individuals participating in the project, at entry 78% had some knowledge of nutrition and its relation to a healthy lifestyle. After a minimum of 12 lessons, 100% of the participants demonstrated increased knowledge and skills in this area. Using Analysis of Covariance, the experimental group increased more in knowledge and behavior change than the control group.

Using Analysis of Covariance there was no significant difference in parenting knowledge between the experimental and control group. However, both groups did improve their parenting skills scores. The experimental group mean score went from pre-program 6.9 to 8.6 post-program (out of a possible 12). The control group increased from 5.6 pre-program to 6.6 post program measurement. Therefore, both groups did increase in knowledge but the experimental group had a 1.7 gain and the control group had a 1.0 gain.

In addition, anecdotal information revealed that the utilization of varied delivery methods (home visits, mail lessons, videos, telephone lessons) proved to work very successfully with this population. Also, the strong referral system through the ROADS team improved the effectiveness and efficiency of the Nutrition Educators ability to recruit, and retain program participants.



State: Texas

Title of Project: Madres Mejores y Niños

Project Director's Name and Phone Number:

Dr. Katheleen F. Ladewig, Professor and Nutrition Specialist  
409/845-6379

Target Population: WIC families in Fort Bend County and Deaf Smith County, Texas.

*Objectives:*

- Objective 1: Extension programs will increase interagency cooperation related to nutrition education in order to reach 1200 of the "neediest" WIC population.
- Objective 2: Participating individuals will acquire the knowledge and skills that contribute to nutritionally sound diets and a healthy lifestyle.
- Objective 3: Participating individuals will acquire behaviors that contribute to nutritionally sound diets and a healthy lifestyle.

*Intervention:*

Six low-literacy, bilingual comprehensive Compact-Disk Interactive (CD-I) modules developed in Year One will be placed in the WIC sites during Year Two. The CD-I modules provide interactive, positive feedback for the learner on a variety of topics:

- THE FOOD GUIDE PYRAMID: A Guide to Good Nutrition
- THE GROCERY GAMBLE: A Guide to Stretching Food Resources
- LET'S MAKE A MEAL: A Guide to Food Safety and Preparation
- THE KITCHEN MAGICIAN: A Children's Guide to  
Nutrition and Health
- HEALTH DURING PREGNANCY
- FEEDING INFANTS AND CHILDREN

Interactive/multimedia is the use of computer technology to combine sound, animation, graphics, and video to deliver information in a mode that invites user interaction. This teaching/learning method is especially suited to the visual learner. Although the modules are written at a 5th grade reading level or lower, a voice-over provides information for non-reading clients. All materials are available in English and Spanish. These modules will be implemented and tested to assist participants in a teaching/learning situation. The CD-I will be introduced in Year Two of the project. Focus groups of WIC clients are being used in the development and evaluation of CD-I content and delivery.

In order to build rapport and provide a support base needed for successful implementation of CD-I modules into WIC sites, three paraprofessionals (75% time) have been employed: two in Fort Bend county in February 1994, and one in Deaf Smith county in March 1994. All paraprofessionals are bilingual (English and Spanish) and are indigenous to the community. WIC clients participate in nutrition education lessons taught by paraprofessionals.

### **Results:**

In six months, three paraprofessionals achieved 6253 teaching contacts of which 5795 were WIC clients and 458 were prospective clients. Since WIC clients come to the clinics every two months, an average of 1932 WIC clients and/or mothers of infants and children receiving WIC are served by *Madres Mejores y Niños* each two month cycle. In addition, prospective clients are taught nutrition and exposed to WIC at various community sites, including summer feeding programs and commodity food programs.

A state advisory committee and two county (Fort Bend and Deaf Smith) advisory groups provided leadership for cooperation, coordination, planning, implementation, and evaluation. The state advisory committee includes Texas Agricultural Extension Service and Cooperative Extension Program at Prairie View A&M University (1890) faculty and WIC personnel. Local Advisory Committees include resource persons in addition to WIC and Extension personnel. These community resource persons provide local information, recommendations, and assistance with *Madres Mejores y Niños*.

### **PRETEST/POST TEST RESULTS: Lessons Taught by Paraprofessionals**

#### ***Knowledge and application of the food guide pyramid***

Percentage of Clients demonstrating knowledge in given area  
on the subject of Food Guide Pyramid principles.

<u>Subject Matter</u>	<u>Pre</u>	<u>Post</u>	<u>% clients increasing Knowledge</u>
Base of Pyramid	54%	81%	27%
Foods in Breads Group	74%	88%	14%
Foods in Vegetable Group	83%	84%	1%
Foods in Fruit Group	80%	87%	7%
Foods in Meat Group	58%	76%	18%
Foods in Milk Group	64%	87%	23%
Foods in Fats/Sweets Category	34%	68%	34%
Low Fat Foods	78%	89%	11%
Servings/Bread Group	30%	79%	49%
Servings/Vegetable Group	44%	81%	37%
Servings/Fruit Group	47%	87%	40%
Servings/Milk Group	34%	82%	48%
Servings/Meat Group	55%	90%	35%
Servings/Fats Category	78%	86%	8%
Combination Foods	22%	73%	51%

Behavior change is currently being evaluated by use of 24 hour food recalls. Evaluation of CD-I effectiveness begin upon placement in WIC sites.

## **1993 REPORT – PARENTS AND CHILDREN GROWING TOGETHER**

### **USDA EXTENSION SERVICE ES/WIC NUTRITION EDUCATION INITIATIVE FOR WASHINGTON STATE**

#### **I. EXECUTIVE SUMMARY – First Year Report, 1993**

State: Washington State

Title of Project: Parents and Children Growing Together

Project Co-Directors:

Lizann Hammond  
County Extension Agent  
5600-E Canal Place  
Kennewick WA 99336-1387

Sue Butkus  
Extension Nutrition Specialist  
7612 Pioneer Way E  
Puyallup WA 98371-4998

Target Population

The target population was defined as the "neediest" WIC clientele, who were young mothers with preschool children and incomes under the poverty level in Benton and Franklin Counties in Washington State. Most of these young mothers had only minimal skills related to selecting, storing, and preparing food and managing food resources, and developing positive parent-child relationships especially related to food. In addition, most of them lacked the skills that would allow them to be gainfully employed. Many were Spanish Speaking.

Objectives:

The overall objective was to change the behavior and promote the nutritional well being of the "neediest" of participants in the Special Supplemental Food Program for Women, Infants and Children (WIC).

Specific objectives Included:

1. Increasing interagency cooperation related to nutrition education in order to reach an increased number of the "neediest" WIC population.
2. Increasing participants skills to acquire the knowledge needed to increase self-sufficiency, improve nutritional status and promote family well-being.
3. Increasing participants decision-making so that they are able to participate in adult basic education job-readiness programs.



## Intervention

The planned intervention strategies to reach the objectives included: (1) developing an interagency task-force which would review development of the program and modify the curriculum as necessary; and (2) modifying nutrition curriculum materials and methods to more effectively reach the target audience and to incorporate parenting and decision-making lessons as a part of the plan.

The initial strategy for reaching the target population was to meet the WIC mothers in the WIC clinic, introduce them to the program and enroll them in a series of lessons which combined nutrition and parenting information in a format that would enhance decision-making. It was initially envisioned that all lessons would be offered at the WIC clinic site. Some weaknesses in the initial design lead to redesign of the strategy for reaching the audience and revising some of the lessons to emphasize those aspects of the educational program that were of the greatest interest to the clientele. A focus group process was planned to improve feed-back to the project staff on status of the program.

## Results

### Interagency Task Force

An interagency advisory committee was formed which helped establish project guidelines and develop an interagency network to benefit WIC clients. The interagency task force establish a teaching site with the local Headstart. They also helped develop the job descriptions for the nutrition education assistants, interview the staff that were hired and conduct new employee training. The interagency task force has improved cooperation among the agencies that deal with the WIC clientele resulting in more coordinated services and referrals.

### Impact of the Program on Participants

During the first year of the project, 1,281 clients participated in the WIC clinic introductory classes. A total of 294 participated in the WIC MOMS classes including 45 clients enrolled through the Teen Parent program (alternate school). Although data was collected on the 294 of clients when they enrolled in the program, because of a series of data handling errors and a personnel problem, little or no exit data was on the impact of the program on these participants was available using the computer program. However, focus group discussions with the participants in the WIC MOMS classes indicated that the clients have increased their knowledge and changed behaviors in four areas: (1) food planning and food preparation; (2) nutrition; (3) parent-child feeding relationships and (4) ability to manage resources and daily life skills. All focus group participants thought the program was extremely valuable.



NATIONAL AGRICULTURAL LIBRARY



1022503267